AUGUST 28, 1961

PURCHASING

THE METHODS AND NEWS MAGAZINE FOR INDUSTRIAL BUYERS



How Much Should Purchasing Cost? p.70

ALSO CHECK: AIR FREIGHT P. 84 / AUTOMATED BUYING P. 80 / PULSE OF BUSINESS P. 7



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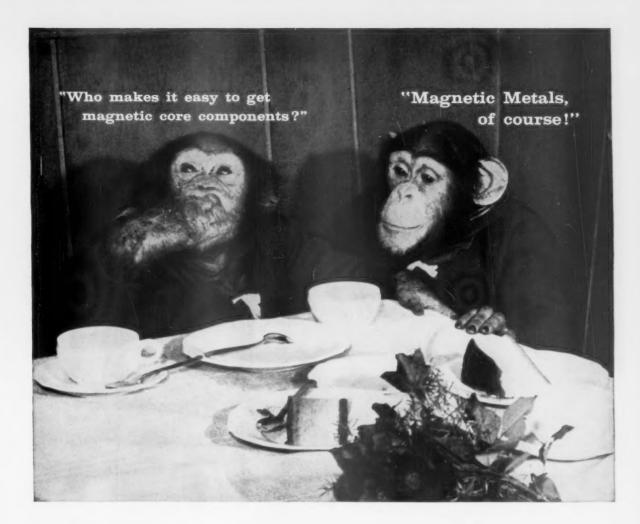


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PURCHASING AGENTS

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The Methods and News Magazine For Industrial Buyers PURCHASING

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Checkup on Plant Purchasing

Handy reference chart helps headquarters purchasing keep tabs on who does what at 28 plant buying departments.

Mechanization Leads to Materials Management 80

New purchasing and inventory control system unites purchasing and stores, improves service, saves \$100,000 a year.

Forms Forum

Innovations in Union Steel Products' forms include a "soft sell" for company products on every purchase order.

When Does the Vendor Accept?

Acknowledgement indicates a supplier has received an order, but it's not binding until he agrees to ship.

Rusiness News Analysis

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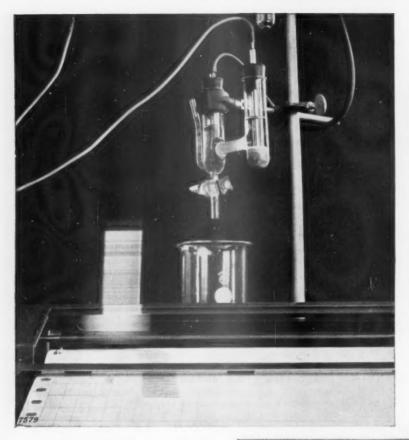
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only a minute fragment of metal for accurate analysis. Consequently, engine bearing corrosion can be traced from its beginning through complete destruction of the bearing surface. Because test variables are minimized, Federal-Mogul engineers can accurately relate degree of corrosion to specific engine operating conditions. This analytical tool is in continual use in our laboratory, assisting research on many different projects. Prevention of corrosion and development of new bearing alloys are high on the list!

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depends on selecting the proper alloy for the operating conditions to be met. Federal-Mogul engineers have had years of experience with bearings and applications of all kinds... and this wealth of knowledge is available to bearings users. This is one reason why F-M sleeve bearings, precision thrust washers, formed bushings, and low-cost spacers are chosen for use in virtually everything from baby buggies to heavy industrial cranes.



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Pulse of Business

Business Sensitive To Berlin Crisis

U.S. To Aid African Nations

IN THE NEXT several months business will play it by ear as the Berlin crisis and other international developments dominate the news. Business will also seek to maneuver successfully in a domestic situation rife with explosive possibilities.

Economic recovery has been buttressed by Washington's plans to strengthen the defense program. Militarily, a reappraisal of ground troop needs and a determination to augment nuclear striking power with conventional weapons will bring Government expenditures to new highs. Passage by Congress of a \$46.5 billion defense bill will add \$3 billion to the economy in the next twelve to fifteen months. In addition, the steadily increasing expenditures for space technology and attempts to close the gap between American and Soviet progress in the moon race can cost up to \$40 billion in the next ten years.

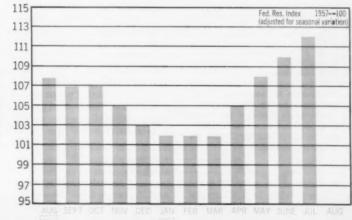
In foreign trade, the United States is faced with loss of business in Europe as the complexities of the Common Market are ironed out and Great Britain and other countries come into its orbit. More attention is being paid to Latin America, and it is in this area that the United States can compensate for European trade loss. To offset Communist influence, Washington is willing to pump a billion dollars into Latin America to assist in raising living standards.

The United States is also prepared to give substantial aid to the recently independent African nations.

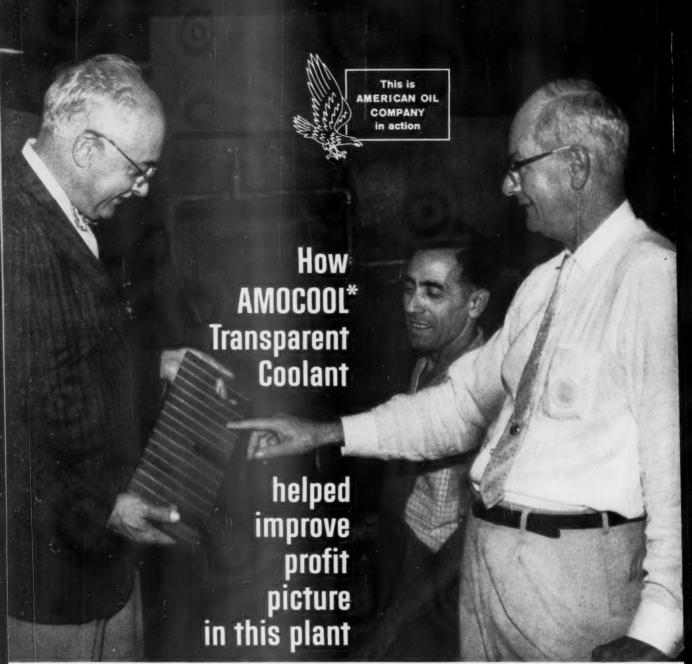
There are uncertainties in the domestic trade picture. Negotiations between automobile manufacturers and the United Auto Workers Union are entering a critical stage. Meanwhile strikes in American-owned copper mining properties in Chile have raised the price of the red metal.

The supply-demand situation in steel is still clouded. The possibility of a strike in the automobile industry is making it difficult for auto makers to predict their needs. Manufacturers ended 1961 model production with fairly heavy inventories, but drastic curtailment of output in August should help clear these stocks. Assuming labor negotiations are concluded without a strike, manufacturers

Industrial Production At New High



The pace of the business recovery is indicated by the Federal Reserve Board's Industrial Production Index, which reached an all time high of 112 in July, continuing on advance started in April.



Eliminate reworking because of rust, reduce wheel loading and extend intervals between wheel dressings; do these and you increase profit per unit, explains Detroit Edge Tool president, Dan Ebbing, to P. E. "Pappy" Stratton of American Oil. Sam Vineh, operator, looks on.



by PAUL E. "PAPPY" STRATTON About the Author.

"Pappy" Stratton has been providing technical help on lubrication and metalworking problems to customers

in the Detroit area for nearly all of the twenty-five years he has been working for the company. In addition to having this store of practical experience to help him, Pappy has completed the Company's Sales Engineering School.

* * *

By using a soap-base grinding compound, Detroit Edge Tool Company was getting excessive corrosion and rust on work and grinding machines. Oil vapor was collecting on machines and on the ceiling, causing dirty working conditions. Most important, high wheel loading was causing frequent down-time for wheel dressings.

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and drilling equipment has been converted to Amocool Transparent Coolant.

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Pulse of Business

PRODUCTION

will probably step up output to over 400,000 cars in September.

Steel users are alert to possible labor trouble in the steel industry next year, particularly in the light of expanded defense requirements. It may be early to worry about next year's deliveries, but P.A.'s remember their difficulties in previous strike periods.

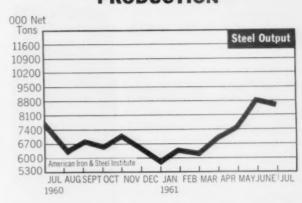
Steel prices have firmed, with some exceptions in stainless and large steel consumers have begun to order at a rate which suggests they are building their inventories. The average stock held in the fourth quarter this year will be substantially larger than it was in the fourth quarter of 1960.

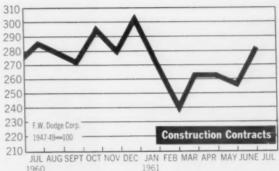
Prices are mixed in other industrial materials. Prices are steady on large volume items in aluminum, but prices on aluminum specialties have been soft. Custom smelters of copper have raised prices ½ cent a pound and prices can go higher if labor troubles are not resolved.

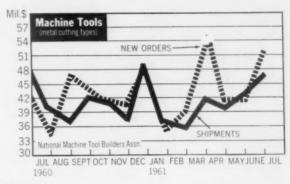
The textile market has also been showing strength, perhaps more on the basis of higher fiber prices than on evidence of increased demand. Wool prices have advanced on a hint of short supply; raw silk prices are higher, and cotton has gone up with a reduction in government holdings and a rise in the government subsidiary price.

Retail sales in July, adjusted for seasonal variations, came to \$18.06 billion, down 1 per cent from the June level. Durable goods sales fell 2 per cent from June to July, chiefly because of the drop in automobile volume. Since the beginning of the second quarter, sales of television sets and major appliances have shown a marked improvement.

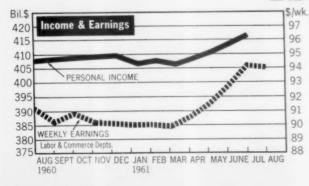
Retailers are looking forward to a substantial increase in sales for the fall and Christ-

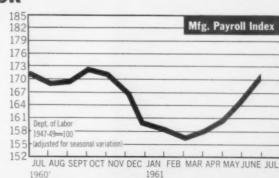






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Pulse of Business

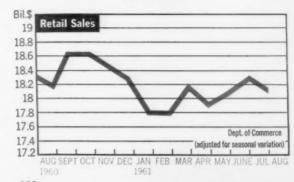
TRADE

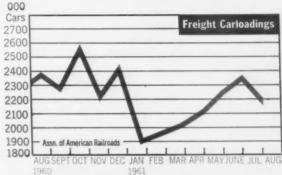
mas season. Steady improvement in personal income and a greater willingness to buy have led retailers to plan for an advance of 3 to 5 per cent in sales in the last four months of the year.

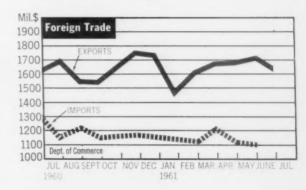
Retailers aren't the only members of the business community looking forward to a new boom. Manufacturers feel the same way. They have been gradually increasing their inventories. The rate of accumulation has been slow so far but many expect it to be stepped up in coming months.

Manufacturers' capital spending programs may also be increased. Construction expenditures are already at an all time high. And many expect the next Department of Commerce estimate of plant and equipment expenditures to be up sharply over previous estimates.

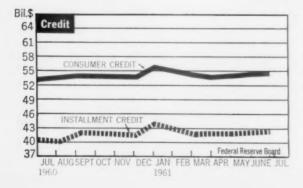
The stock market-which usually anticipates actual business conditions by six months to a year-surged forward to new highs. So far, the Federal Reserve Board has made no attempt to restrain the boom that is developing. It probably won't be nearly as eager to put on the brakes now as it was two years ago. In 1959, the Federal reserve deliberately tightened up the money supply to the point where the Treasury couldn't borrow money for less than 5%. Banks were unable to make many new loans because they simply didn't have the money to lend. The objective of the credit squeeze was to prevent inflation. This objective was achieved; prices have been stable for two years now. But many economists now believe that the Federal Reserve's tight money policy in 1959 was premature and much too severe. As a result, they believe, the Federal Reserve turned a boom into a recession. It's unlikely that it will repeat its mistake in 1961.

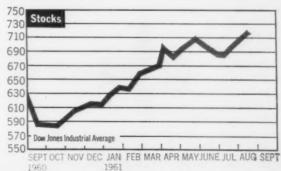






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*Manufacturers of Johnson, Evinrude and Gale Outboard Motors.



Straws in the Trade Wind

- ▶ '61 AUTO OUTPUT OFF 10%—Production of automobiles during the 1961 model year is estimated at 5.4 million units by Ward's Automotive Reports. This is a 10% decline from the 6,011,481 produced in the 1960 model year. General Motors is expected to account for 47.7% of the total; Ford Motor Co., 31.3%; Chrysler Corp., 12.8%, American Motors, 7%, and Studebaker-Packard, 1.2%.
- ▶ NEW TRAFFIC GUIDE—A new Issue of Uniform Freight Classification—a valuable source book for P.A.'s interested in information about motor freight classifications—will be brought out soon by the American Trucking Association. Copies may be reserved in advance by forwarding \$7 to the ATA Order Section, 1616 P St., N.W., Washington 6, D.C.
- ► 1ST HALF STEEL SHIPMENTS OFF—Shipments of finished steel products in the first six months of 1961 totaled 31,227,998 tons—off 27% from the similar period of 1960. Cold rolled sheets, with over five million tons shipped, remained the product with the largest deliveries, says the American Iron and Steel Institute. Both the automotive industry and warehouses and distributors bought more than five million tons during the first half.

For the P.A.'s Hot File . . .

Cotton cloth prices are heading up, after falling for about a year and a half. A major type 80-square print cloth is being quoted as high as 18 cents-a-yard in New York—about a penny more than a month ago. At the end of 1959, the price was 23 cents-a-yard. One big reason for the upturn: the Berlin crisis may result in a boost in the armed forces, thereby increasing the government's clothing needs. In addition, many buyers now have minimum inventories and are ready to re-enter the market.

- PRICES OF IMPORTS RISING—The day of reckoning may be coming for many P.A.'s who have been cutting costs by buying from suppliers in Europe or Japan. Foreign wages are rising much faster than American wages. Wage gains by foreign workers are now exceeding productivity gains. British manufacturers are already having problems staying competitive in world markets; eventually German and Japanese manufacturers may be faced with the same problem.
- ► PRIVATE DOMESTIC INVESTMENT UP—Gross private domestic investment increased \$8.2 billion (seasonally-adjusted annual rate) in the second quarter to \$68 billion. The big change came in inventories—which were cut at the rate of \$4 billion in the first quarter and accumulated at the rate of \$2.5 billion in the April-June quarter.
- ➤ CARTON MAKERS BOOST PRICES—Major suppliers of corrugated paper boxes have increased prices at least 10% recently. The container makers cite mounting production costs in the industry. The price hike indicates that suppliers believe demand for cartons has firmed—which in turn usually means a general business pickup is on the way.
- ▶ MORE RESULTS FOR VA—Value analysis at General Dynamics/Fort Worth has cut hundreds of thousands of dollars off the cost of the supersonic B-58 Hustler bomber. Among the savings: \$200,000 by realigning equipment for more effective use, \$13,285 by adopting special tooling, and \$1700 per bomber by eliminating parts no longer needed for an essential function.
- ➤ SALES HIKE FOR EQUIPMENT—Material handling equipment sales will rise 10% in the second half of 1961 over the first six months, says the Business and Defense Services Administration. This estimated increase is expected to bring total sales for 1961 above the 1960 level.
- ► GSA SELLING NATURAL RUBBER—Sales of crude natural rubber from the national stockpile totaled 1127 tons last month, says the General Services Administration. In the last 21 months, the government has sold 111,244 tons from the stockpile.

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Pulse of Business

Straws in the Trade Wind

levels.

- ► LABOR SURPLUS AREAS STEADY—The number of "substantial unemployment" areas remained at 88 in July for the third consecutive month, says the Department of Labor. The recession high of 101 labor surplus areas was recorded in April.
- ▶ WHITE COLLAR PAY HIGHER—Salaries of U.S. office workers rose slightly this year, according to a survey by the National Office Management Association. It says a weighted mean weekly salary for all types of white collar workers is up \$2 to \$75—the smallest year-to-year jump since 1955. The association also reports that unionization of clerical employees is down. Unionization has affected 7.3%, of the offices compared with 9% ten years ago.
- ► CONTROLLING EXPORTS TO RUSSIA— The Kennedy Administration is considering tightening controls on shipments to Russia and her satellites, says Secretary of Commerce Luther H. Hodges. It is "entirely possible," he says, that there will be a reduction in the kinds of goods that are allowed to be shipped to the Soviet bloc.
- ▶ BUSINESS GETTING BETTER—Two local purchasing agents' associations report that business conditions are better in their areas. The Chicago Association says "business is continuing its steady improvement" and cites higher production rates, increased employment levels, and more new orders. And the Cleveland group says "General optimism still prevails for the balance of 1961."

- → GETTING THROUGH TO THE WORKERS
 —Only one message in five from top management gets through to the rank and file according to a study by the University of Minnesota. The study notes that even vice-presidents understand only 67% of what they hear from the president. More effective communications thus remains a major management problem at all
- ► CANADIAN PRIVATE CARRIAGE—U. S. motor carriers are tuning in on a warning issued to Canadian truckers by the Canadian Industrial Traffic League. Dominion truckers were warned to take a new look at service and rates or face continued traffic erosion. Fifty-five percent of League members plan increased use of private trucks.
- ► FOREIGN OUTLAYS TO ADVANCE—American companies will invest \$4.5 billion in overseas plant and equipment this year, a 20% increase over 1960, says the Department of Commerce. The figure is based on a survey made prior to the buildup of tension over Berlin and may drop if some companies hold off until the crisis is resolved. Roughly one-third of the anticipated business expansion is in Europe.
- ► AUTO SELECTION INCREASES The five major U. S. auto makers will produce over 400 versions of their cars during the 1962 model year. In addition to the compact and the standard-size model, the industry will offer an "in-between" model and a "pocket-sized", or sub-compact model later in the model year.

QUOTE!

There is no longer a place for militant unionism around the bargaining table, says Dr. Malcolm F. Severance,

Professor of economics at the University of Vermont. Speaking to the National Association of Metal Finishers, he declared: "Unions and management must recognize that they have common economic interests which can best be satisfied by peacefully bargaining with discretion, responsibility, and rationalism." He adds that "Surplus capacity in many basic industries plus increasing foreign competition are basically changing the bargaining framework of the earlier postwar years . . . Increasing public scrutiny plus a growing philosophy that union leadership must be held responsible for the economic consequences of their actions will reduce their power and influence."





EXAMPLE: Schrader Square-end Cylinders not only have quality built into every part, but feature many extras. For instance, the unique cartridge-type bronze bearing assembly (A) is easily removed by releasing just one retaining ring—no need to dismantle the entire cylinder for bearing maintenance. Special "step" design cylinder seal (B) assures perfect alignment and positive seal without danger of gasket damage. Below surface cushion adjusting screws (C) are protected from damage but fully accessible. They lock to eliminate loosening due to vibration.

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vides a variety of mountings. Special bushings are available for bone-dry piston rod in hydraulic operation.

ANOTHER EXAMPLE: Schrader's new direct action Hydraulic Gauges without mechanical linkage (A) eliminate fatigue failure of internal parts. They can withstand 100% overload without damage to accuracy, and are tripledamped (B) to eliminate indicator oscillation from pump pulses, surges, or shock that would damage other types. Can be maintained and calibrated easily in the field. PSI pressure ranges 0-500, -1500, -3000, and -5000.



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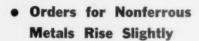
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QUALITY AIR CONTROL PRODUCTS

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Pulse of Business

The Trend of Prices



Copper Shipments Advance; Tin Prices Steady

O RDERING of nonferrous metals by purchasing agents picked up slightly toward the end of the month. However, many P.A.'s were still hesitant to boost their inventories over current levels.

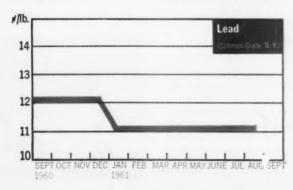
This is the current situation in copper, tin, lead and zinc:

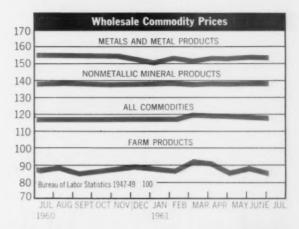
Copper: August shipments of copper will probably exceed the July total in the opinion of many observers. But deliveries will still most likely be under the June level of 139,700 tons—the highest in two years.

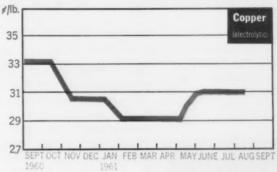
A new proposal by a Chilean legislator could affect the supply of the red metal in this country. Senator Salvador Allende, runner-up to President Alesandri in the 1958 presidential race, introduced a bill to nationalize Chile's copper mining industry, nearly 90% of which is owned by American companies. Although chances for passage of the bill are slim, the measure is a reflection of a growing feeling of nationalism inside of Chile.

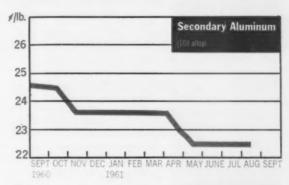
Shipments of American brass mill products were almost 50 million pounds higher in the first half of 1961 than in the last six months of 1960. Deliveries totaled 867,511,000 pounds in the January-June period this year, compared with 820,558,000 pounds in the last half of 1960.

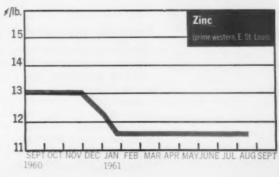
Tin: Tin prices have been holding steady in recent weeks. The undertone of the market remains generally firm in New York, London, and Singapore. (Turn to Page 21)



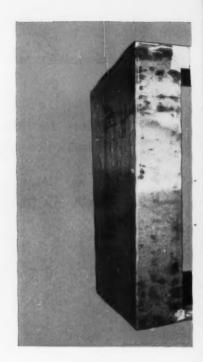








How METALOGICS* takes the P.A. off the high-cost hot seat!



The following case histories are typical of how Ryerson Metalogics helps hundreds of companies save money, improve products, and cut production waste.

Metalogics-trained Ryerson specialists help you value-analyze cost-soaring production problems—and they back up their suggestions with unbiased recommendations on exactly the right steel, aluminum or plastic to do each job best for less.

Little wonder, then, that more and more companies across the country find the high-cost hot seat a little cooler after inviting a Ryerson man to value-analyze specific problems, and come up with recommendations. Give him a call—perhaps he can help answer some of your high-cost questions.

*METALOGICS—the Ryerson science of giving optimum value for every purchasing dollar.



Company was making chrome-plated table legs as a 3-piece weldment and having problems in holding concentricity and making proper preparation for the mirror finish. In addition, production costs were high.

Ryerson recommended this Metalogical

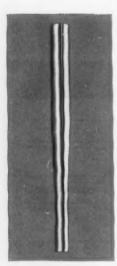
solution: make the legs from *one* piece of 3" O.D. soft-annealed, cold rolled, electric-welded tubing—half the length tapered to 2" O.D., holding concentricity to 1/32". Results: surface was just right for chrome plating, and production cost reduced.

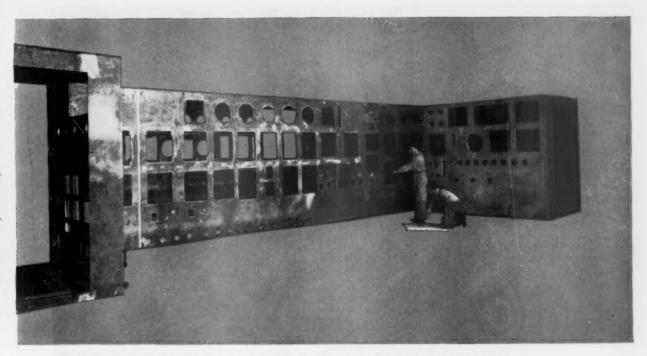
THREAD GALLING ELIMINATED

Manufacturer made this special coupling of aluminum to gain the advantages of light weight, corrosion resistance and easy machining. But a problem developed due to galling of threads.

Following the recommendation of a Ryerson Metalogics specialist, the company hard-coated the parts by special low-temperature anodizing which produced a surface hardness of Rockwell 70 C. Galling was eliminated, and corrosion resistance increased. One more example of top technical help from Ryerson.







150 OPENINGS BURNED IN HUGE CONTROL PANEL ASSEMBLY

Expert Ryerson flame-cutters burned more than 150 openings in the steel plates that make up this huge control panel assembly.

Each opening had to be located and cut with extreme accuracy to permit proper installation of the complex instrument system. Distortion had to be carefully controlled and a high degree of flatness maintained so that the plates would have a good appearance when painted. All such requirements were readily met by Metalogically-oriented Ryerson service.





SWITCH TO LEDLOY® STOPS TEARING...CUTS REJECTS

In making this roller coater—Gasway Corp., Chicago—was having trouble machining C-1018 bar stock to produce a close-tolerance roll. Three-step machining was required at both ends of the bar, and tearing was frequent with up to five stops per cut to regrind the tool.

After studying the problem carefully, their Ryerson specialist recommended a change to Ledloy 300. Results from this fast-machining leaded steel: higher produc-

tion; longer tool life; rejects cut to a minimum.

Other steels for this coater, including angles, expanded metal, and cut-to-size side plates, are also supplied by Ryerson.

As P. A. Bill Vastine puts it, "Time and time again Metalogics takes me off the spot. It gives me technical help, plus convenient, dependable, single-source service on all my requirements."

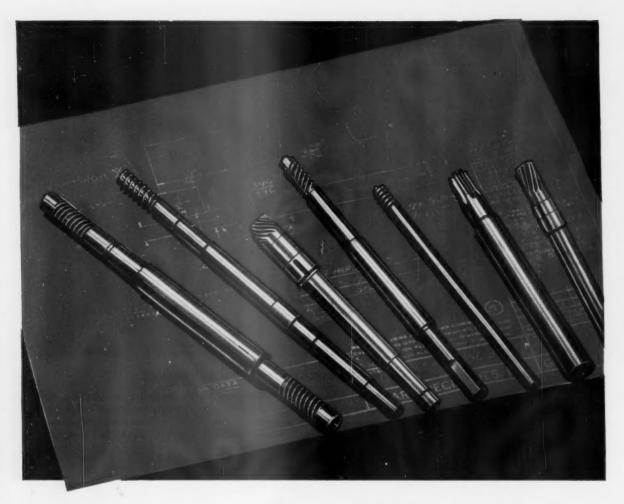
RYERSON

JOSEPH T. RYERSON & SON, INC., MEMBER OF THE THE STEEL FAMILY



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Our experienced engineers are at your service to discuss any Small Gearing problem with you—and help you get better answers. Call or write us—now.

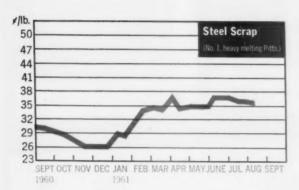


SEND FOR G.S. illustrated folder! See where and how we massmanufacture Small Gearing to uniformly fine tolerances. Folder contains 23 pictures of Small Gears, plant view, Diametral and Circular Pitch Tables. Ask for your copy on company stationery, please!

45 Years of Specializing in Small Gearing!

For More Facts Write No. 166 on Information Card-Last Page

Pulse of Business More on Price Trends



A possibility exists that the present level of Malayan tin production may soon be reduced. A Malayan government official says he doubts whether his country will ever again reach its postwar production record of 62,300 tons set in 1956. Shipments of tin from Malaya last month were the lowest since last February.

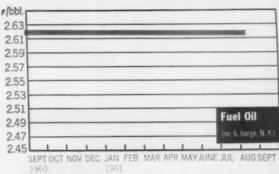
Most large American companies involved in the tin market, such as the major steel companies and can manufacturers, have expressed opposition to government proposals that the U.S. join the International Tin Council. They told the Department of Commerce that the United States can take advantage of the results produced by the council without actually becoming a member.

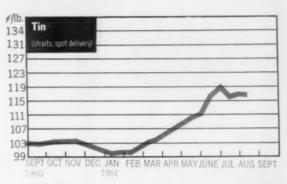
Lead: There has been a slight pickup in demand for lead. Orders for delivery this month were about evenly divided between the flat and the average price.

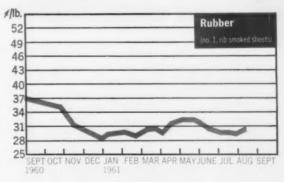
Latest figures on lead held by domestic smelters and refiners show that the inventory decline is continuing. Stocks of lead in all forms totaled 307,485 tons—7000 tons lower than the 25-month peak established in March, says the American Bureau of Metal Statistics.

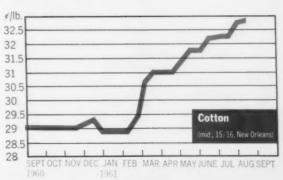
Zinc: Purchasing agents for steel mill galvanizers are continuing to buy prime western grade zinc in good volume. However, demand for special high grade remains slow. Reports are circulating that discounts up to ½ centa-pound below the official price for special high grade are being offered by vendors.

Supplies of refined slab zinc at U.S. smelters dropped 1216 tons last month to 206,604 tons. This marked the fourth consecutive monthly decline, says the American Zinc Institute. July shipments to buyers were down 4676 tons to 68,861 tons.











Precise heat treating results are a must for vital components of the electronic marvels produced by International Business Machines Corp. in Rochester, Minnesota.

IBM heat treats about four million parts a year in Armour ammonia atmospheres. Heat treating processes used include carbonitriding, nitriding, annealing and brazing. A good example of one of these parts is the Geneva Star Wheel shown above, which must be precise and as wear-resistant as possible.

Helping to create consistently fine results is the uniform, high quality of Armour ammonia. Tested after filling to be at least 99.98% pure when delivered, every tank truck of Armour ammonia meets IBM's rigid standards for heat treating.

Armour ammonia has been used since the plant opened $2\frac{1}{2}$ years ago. But this confidence goes back further. Armour worked closely with IBM engineers in planning the initial installation, preparing blueprints, and choosing the proper ammonia equipment and parts. Armour technical men also inspected the system and helped to get it under way and running smoothly.

Prompt delivery from Armour's South St. Paul plant is also important to IBM. Operating around the clock, IBM often requires same-day or next-day service—and they get it from Armour.

Call Armour for ammonia. High purity assured (every cylinder and tank truck tested to be at least 99.98% pure)...fast delivery (171 distribution points across the country)...expert technical service (whenever needed and at no cost).

AMMONIA SALES: Cylinder, Tank Truck, Transport and Tank Car Service

Armour Industrial Chemical Company

One of The Armour Chemical Industries

110 North Wacker Drive • Chicago 6, Illinois

For More Facts Write No. 22 on Information Card-Last Page



Defense Spending, Business Pickup, Boost GNP Estimate

EACH NEW GOVERNMENT commitment to spend is raising the sights on where the economy will go the next 12 months. Before the Berlin crisis and the resultant increase in defense spending, estimates were that Gross National Product would increase 7½% during the next year.

Now, with expanded military procurement, it looks as though GNP will go up 9% by midsummer of next year—and could hit \$580 billion by the end of '62.

The immediate surge comes from increased government spending. The longer range increase will come from other sources:

1. Government economic forecasters point out that personal savings have been increasing that consumers have held back in making purchases. They predict this will change, and the level of consumer buying will increase sharply.

2. Inventories have been worked down, reflecting the lower level of sales over the adjustment cycle. Inventory levels will undoubtedly be built up to back up higher sales.

3. Spending for plant and equipment, which this year will be lower than last year, will start to reflect the new level of economic activity in 1962.

Confidence about the course of the economy is buoyed by the remarkable 2.8% jump in GNP during the second quarter.

There is still an area of uncertainty on prices. Price stability has extended over the last several years but how long it will continue is problematical.

With the rapid rise in GNP projected over the next year, some price creep is expected. Such increases, it is estimated, can be held to around 10%.

No Rise in Interest Rates

The administration is taking a major gamble in the area of prices with a two-front decision—first by deciding against a tax increase, to finance the military build-up, and second by deciding to hold interest rates down. The decision not to call for a tax increase or a rise in interest rates was made largely out of concern that such restraints at this time would discourage re-

employment of jobless workers. Unemployment is still close to 7% of the work-force, and President Kennedy is committed to bring it down to 4%.

A decision was taken to let the economy ride through the remainder of this year without sharp curbs, with the objective of stimulating reemployment even though there is an admitted risk that prices could begin to move.

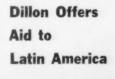
Kennedy will take another look in January, and if necessary call for a larger tax bite. The critical point will come when the level of unemployment drops to $3\frac{1}{2}$ million or 2% of the working force. At that level there will be pressure to increase taxes and cut back on the New Frontier welfare program.

See no Sign of Industrial Boom

Second looks at the economy by the Business and Defense Services Administration of the

The Kennedy Administration's proposed Alliance for Progress, whereby \$20 million would be assigned for a tenyear program of Latin-American development, received its first airing at the Inter-American Economic and Social Conference in Uruquay. Here Undersecretary of State Douglas Dillon discusses the plan with Roberto Costillo of Ecuador.

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For More Facts Write No. 168 on Information Card-Last Page

6116

Washington Report continued

Department of Commerce suggest that the level of business for this year will roughly equal last year's.

These reports hew closely to forecasts issued during the first part of this year, and give no hint that a major industrial boom is in the making.

In forecasting the outlook for steel for the remainder of this year, the BDSA report repeats an earlier estimate that steel ingot production will reach 100 million tons—about the same as the 1960 figure.

Aluminum shipments during the first part of this year lag behind those of last year, but are catching up. Final totals are expected to top last year's. A similar forecast is made for magnesium.

Nickel consumption pattern showed a sharp drop in the first quarter as compared with last year, and an increase in the second quarter. Leveling off is expected in the third quarter, and a further increase in the fourth.

Strong Recovery In Copper

Domestic copper made a strong recovery in the second quarter from a low level of first quarter operations which were down sharply from the year before.

Sales of consumer goods during the first six months were 9% less than last year, but improved sales during the last half are expected to bring the total for the year even with 1960.

One area where the level of activity has been clearly ahead of last year—and will continue to be—is construction. Private construction has roughly equaled that of last year, and total public construction figures are about 10% ahead of last year.

Pickup Indicated for Fourth Quarter

Department of Commerce spokesmen say the BDSA industry forecasts indicate a pickup during the fourth quarter of this year, followed by a sharp acceleration in the economy.

The durable goods sector is expected to benefit from increased demand. Military orders will have an impact by the end of this year, and plant and equipment expenditures will reflect the "boom" trend.

Product lines likely to share in new orders from defense procurement, according to the Machinery and Allied Products Institute, are:

Machine tools, materials handling equipment, trucks and other motor vehicles, textile machinery, ground support equipment, electronics and communications equipment, construction equipment, and components and spare parts.

The impact of defense spending on the economy can be estimated from comparative figures issued by the Department of Defense:

Combined expenditures for major procurement and research and development in fiscal year 1962 are expected to top those of fiscal year 1953, the last year of the Korean War, by \$1.4 billion; spending on missiles has quadrupled since 1956; research and development spending has more than doubled in the same period. Aircraft procurement expenditures have, of course, declined but the new emphasis on conventional warfare may reverse this trend.

Industrial productivity is expected to increase greatly as output is stepped up.

The patterns following the several postwar recessions all included an immediate substantial boost in productivity—as high as 6 to 7%.

Initially as the volume of work increases, manufacturers lag in their hiring programs, and there is an abnormally high increase in output per manhour.

As industry adjusts to the higher level of demand, the increased work force cuts down the initial productivity gains—and the average gain for the recovery year levels off to about 4%.

—A. N. Wecksler



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It stands for a company with more than 40 years of experience in the warehousing and distribution of quality tubular products.

It stands for a company of specialists
—mill-trained personnel well
versed in all phases of
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P. A. AND FRIEND FIND COOL \$28,000 IN HOT METAL CAR BEARINGS

You're looking at three very pleased men. On the left, the purchasing agent for M. H. Treadwell Co., a major manufacturer of steel mill equipment. He presented his company with savings of \$28,000 in bearings. In the middle, the design engineer to whom he introduced the man on the right. That's the Timken® bearing sales engineer who recommended a smaller, less expensive bearing that had the capacity to handle car loads of molten iron.

Purchasing agents who put their company's engineers in touch with Timken bearing engineers often realize spectacular economies. Timken bearing engineers have the experience and the know how, and they're backed up by the most advanced testing facilities in the industry. This always results in the most economical bearing applications. Timken bearing engineers can help your engineers select the one bearing, from more than 10,247 sizes and 30 types, that will stretch your bearing dollar the farthest. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "Timrosco". Makers of Tapered Roller Bearings, Fine Alloy Steel and Removable Rock Bits. Canadian Division: Canadian Timken, St. Thomas, Ontario.



European Nations Fight Rising Prices

THE CHIEF responsibility for the recurrent danger of inflation in Europe lies with rising wages, according to an independent report, "The Problem of Rising Prices", written by six economists. The report was published recently by the Organization for European Economic Cooperation.

The problem of rising prices, however, is more immediate than the longer-term danger of inflation. In this area, Sweden, Austria, and France are beginning to feel the pressure mounting.

The chief causes of this trend are excessive demand for goods and labor and excessive wage increases arising from industrial bargaining. Monopolistic pricing and temporary causes such as sales taxes are also responsible in a lesser degree. The OEEC writers conclude from this that some form of governmental wage policy is needed.

France has been one of the less successful among European countries in keeping prices down—with a 33% price rise since 1953 contrasting with Switzerland's 7%. Sweden's price rise, at 24%, is next highest, followed by the Netherlands and Britain with 20%, Italy with 15%, West Germany with 14%, and Belgium (like Canada and the United States) with 10%.

As 1960 ended, many economists were suggesting that the danger of inflation was becoming less imminent as the European boom lost momentum. More recent economic analyses,

however, tend to the opinion that the boom is once more gathering speed and should last until late 1962 or 1963.

The explanation of this continued high level of activity is found chiefly in the strength of the balance of payments situation in most European countries. This is based on the strong competitive position in world markets which Europe's industry has built up since the last war. Advocates of trading unions also point out that the formation of the European Common Market has stimulated member countries' trade.

Investment Continues High

This high level of export activity repeats itself on the domestic scene in the continuing high level of investment—largely a result of expansion and modernization forced on industry by rising demand and an increasing labor shortage. The pace of the boom will probably depend on the extent to which modernization investment can compensate for the lack of workers. A further incentive is the increasing competition as a result of lower tariffs.

The intensity of current investment may very well slow down in a year or two. Present expansion could bring about a considerable amount of surplus capacity. Industries where this surplus capacity could develop include steel, chemicals, and motor vehicles.

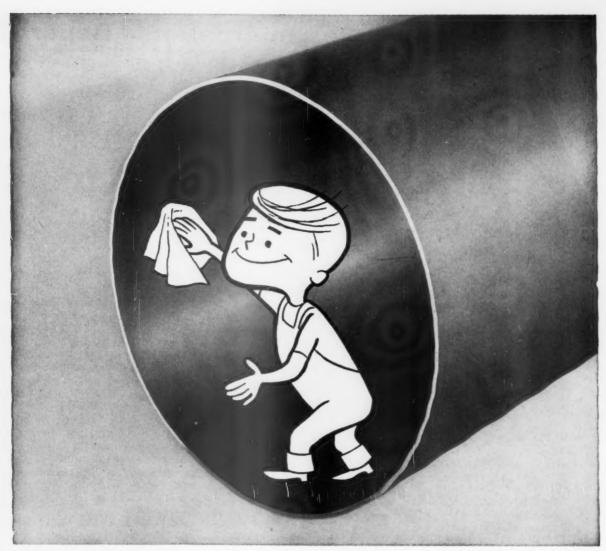
(Please Turn to page 29)

INDUSTRIAL PRODUCTION

Base Year	1953	1959	1960
Germany	100	. 162	180
France	100	. 152	173
Netherlands	100	. 139	157
Britain	100	. 122	130
Italy	100	. 158	182
Belgium	100	. 119	126
Common Market			
United States	100	. 116	119

Source: Institut National de la Statistique et des Etudes Economiques, Paris.

German industrial production rose 80% between 1953 and 1960, compared with 19% for the U.S. Production in the European Common Market was up 55%.



"The Gravity Kid" shows how

YOU CAN STOP CONTAMINATION WITH THE HELP OF CONTOUR-WELDED STAINLESS TUBING

In tubing, surfaces that are microscopically rough and ragged can cause contamination—simply because of the product becoming incrustated. Contour-welded tubing helps lick this problem because it's smoother inside than any other tubing, welded or seam-

This smooth surface is the result of Contour-welding, a patented* process that eliminates the weld bead. Unlike conventionally-welded tubing, it's welded at the bottom. Gravity pulls the molten metal down so that the weld area corresponds

the molten metal down so that the weld area corresponds to the inside contour of the tube. There's no bulge on the inside surface. Even on the outside, the seam closely *U.S. Potent 2,716,692

conforms to the tubing shape.

In conventionally-welded tubing, gravity pulls the molten metal down into the tube, forming a bead that is difficult to remove by cold working. And cold working can lead to undercuts that become focal points for incrustation.

Even seamless tubing isn't as smooth as Contourwelded tubing. That's because it's extruded or pierced, whereas Contour-welded tubing is formed from uniformly rolled strip steel.

But see for yourself. Write today for our free 48-page manual, which describes sizes from 1/8" to 40" O.D., in stainless and high alloy steels, titanium, zirconium, zircalloy, and Hastelloy**.

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Common Market Growth Changes Trading Patterns

B RITAIN's formal application for membership in the Common Market seems certain to have almost immediate and far-reaching consequences even before a decision is reached on the request. While acceptance in the Common Market cannot be taken for granted. many of the changes in world trading patterns that would accompany it will take place any-

That's because if current British tariff policy is not based on the assumption that Common Market membership will come about, there will be great confusion on tariffs in the next year or two-regardless of what happens in Brussels and the other capitals of the Six.

At present, the Common Market countries have reduced tariffs between themselves by 30%, with a further step of 10% or possibly 20% to come at the end of the year. British adherence to the Rome Treaty would obviously have to be followed by immediate extension of the same degree of tariff reduction as that already achieved by the Six. Thus if her membership in the Common Market is not accepted until the end of next year-and if Britain makes no preparatory moves-her industry would have to cut tariffs overnight by as much as 50% in favor of her new trading partners.

Much more likely is the offer of some unilateral tariff concessions within the framework of GATT. This would lower the scale of subsequent reductions necessary to consolidate membership. It would also be widely welcomed by those who believe that the British economy needs to be subjected to a greater degree of competition, whether inside or outside the Common Market.

The important aspect of preliminary tariff cuts on these

to be extended on a non-discriminatory basis to virtually all which other countries with Britain trades. And while British negotiators would clearly want to secure as much as possible in exchange for these reductions, the impression is growing that a 10% or even 20% across the board cut (with certain exceptions) may be made at Geneva on a unilateral basis if necessary.

A move of this kind could result in major changes in world trading. The comparative advantages of competing sources of supply would be subtly altered, often in ways that cannot now be predicted in detail.

Trade in raw materials would be changed in scale and direc-

lines is that they would have tion only to the extent that tariff changes led to increased industrial production in some areas. This could possibly be at the expense, at least in part, of other areas. The main impact on finished goods would probably be a greater opening up of British and Commonwealth markets to other nations.

However, the area of greatest interest is probably semifinished products with a high labor content. To the extent that these goods could be bought more cheaply by Britain and incorporated into machinery and other products for subsequent export, there could be a major shift in supply and demand patterns. This shift is bound to come, whatever happens between Britain and the Six.

New Products From Europe

Here are a few of the more recent developments in European industry:

Exhibition Stand—An unusual exhibition stand with no visible means of support has been developed by N. V. Algemene Kunstzijde Unie (Velperweg 76, Arnhem, Holland). It is a tent made from coated material of the type used for collapsible floating oil containers. The stand, with welded seams, is held up by a slight difference in the internal and external air pressure.

Scale Ballpoint Pens-A ballpoint pen with a spring balance in the barrel containing a scale ranging from 1/6 of an ounce to 11/2 ounces is being sold by Bass and Keller (Langenorgen/Bodensee, Germany). To weigh a letter to see if extra postage is required, the envelope is slipped under the clip which normally holds the pen in position in the pocket. By holding the pen at the top of the barrel, the weight can be read off the scale.

Sticky Label Printers-A hand-worked machine, made by Novacel (6 Rue Paul-Baudry, Paris 8, France), will produce self-sticking labels in relief. The machine is loaded with bands of adhesive, the desired information is composed letter-by-letter on the dial, and the impression is made by applying light pressure. This impression appears in white relief on the label, which will adhere permanently after being pressed on.

Crepe Yarn—A method of producing crepe yarn in one continuous operation has been announced by Sateri Oy (Valkeakoski, Finland). One knot is needed for every two kilograms of yarn-compared with earlier processes needing 40 knots.



11 tons of forged steel machined to less than .002" tolerance



Machining holes for connection between thrust and crankshafts.

Photos couriesy
Fraser-Nelson Shipbuilding and Dry Dock Co., Inc.
Superior, Wisconsin

Connecting the forged steel thrust shaft and 3-throw crankshaft at Fraser-Nelson Shipbuilding and Dry Dock Company, Inc., Superior, Wisconsin.

This 11-ton 30-foot forged steel shaft assembly readies the Midland Steamship Lines carrier, Michael K. Tewksbury, to do battle against the buffeting waves of the Great Lakes. The one-piece crankshaft was twisted and machined to less than .002" tolerance along with the thrust shaft at Erie Forge & Steel Corporation. These components replace the drive system powered by an 1800 hp. triple-expansion steam engine . . . new service life for this veteran Great Lakes ore and grain carrier.

Here, at Erie Forge & Steel Corporation, continuous quality control procedures direct the work of skilled craftsmen from order to shipping dock.

Your requirements for quality forged and cast steel components are a challenge which we welcome — consult with us in full confidence that we will serve you well.

ERIE FORGE & STEEL CORPORATION

ERIE, PENNSYLVANIA

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Purchasing Follow-up

Businessmen Urged to Use Commerce Dept. Facilities

American businessmen are being urged to use the facilities and information available from the Department of Commerce in a series of advertisements in leading business publications.

Purpose of the advertisements is to make businessmen aware of the \$9 billion fund of research and patent information at the Commerce Department. Free data is available in Washington, D.C. and 33 field offices on domestic marketing of products and services, foreign outlets for American companies, community development, government patents and technical research, and similar areas.

Secretary of Commerce Luther H. Hodges says "We have reason to believe that many businessmen are not aware of the facilities we can offer them to help them increase their domestic or foreign markets, improve their products or processes, or participate in redevelopment of their areas."

Purchasing agents interested in obtaining information and advice from the Commerce Department can do so by writing to any field office or to headquarters in Washington.

Steel Warehouse Sets Up Combination Pricing

A new method of steel warehouse pricing—which combines item and quantity discounts has been established by Hawkridge Brothers Company of Boston and Waterbury, Conn.

The system, called "profitunit pricing," combines two principal features:

(1) Total Order Grouping whereby a customer can combine hot rolled, cold finished carbon steel, and alloy grades to make up a large quantity order.

(2) Uniform Price Extras whereby a uniform set of extras is used for all grades, instead of many different types of quantity extras. Extra costs are not related to particular product classes. Price sheets list extras on the basis of weight rather than product.

Two years ago, the company set up a "profit-unit purchasing" plan and last year it instituted a "profit-unit engineering" plan. Hawkridge Brothers says that with all three plans, P.A.'s can save as much as 15% on purchase costs of steel.

Edwin Hawkridge, president of the New England steel service center told PURCHASING Magazine that the new system is "cost-justified. The larger the order and the larger the items involved in the order, the less it costs us to fill it. We are trying to help customers who try to help us by reducing the cost of distribution."

The only requirement that buyers must meet to take advantage of the plan is to group all items in one order issued on one day for shipment at one time to one destination. Mr. Hawkridge says that the new system will reduce the cost of steel to most of his customers in most cases.

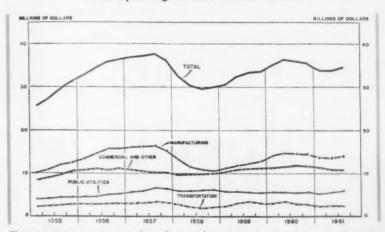
1961 Business to Come Close to '60, PA's Say

Eight out of ten purchasing executives in the Chicago area expect 1961 to be as good a business year as 1960. Their collective opinion is voiced in the latest Business Survey Committee report of the Purchasing Agents Association of Chicago.

More than half (58%) of the respondents to the committee's survey expect business to be better this year than last; 26% expect it to be about the same; only 16% expect it to be worse.

"The optimism shown in the report," said chairman William L. Bucksot, "is particularly encouraging, since 1960 was a near-record year for many companies. In spite of summer doldrums and vacations, he said, "business conditions continue to improve."

Plant Spending to Rise in 3rd Quarter



The government estimates that plant and equipment expenditures in the July-September quarter will rise to \$34.6 billion at seasonally adjusted annual rates. For the year, spending is expected to total \$34.5 billion, off 3% from 1960.

"WE GET 3 TIMES THE WEAR AT NO EXTRA COST WITH RIEGEL PLASTICCOATED GLOVES"



Riegel No. 418 Plastic Coated Glove

Here Are The Facts!

COMPANY: Dallas Cast Stone Co., Dallas, Texas

GLOVE PREVIOUSLY USED: Competitor's Plastic Coated

GLOVE RECOMMENDED: Riegel Plastic Coated Palm, No. 418

SAVINGS: "We get three times more wear. Far exceeds any type we have ever used before. Riegel's No. 418 costs no more, so we've cut our glove costs on this operation almost 66%!"

COMFORT: "Our men prefer Riegel No. 418 because it is cut larger and feels more comfortable. The canvas back not only outwears all previous gloves, but the porous material *breathes*, making gloves cooler."

Here is another saving made possible because Riegel Industrial Analysts fit the right glove to the job. For help in reducing *your* glove cost, call or write Riegel today.

Riegel

Glove Div. • RIEGEL TEXTILE CORP. • Conover. N. C.

SALES OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES

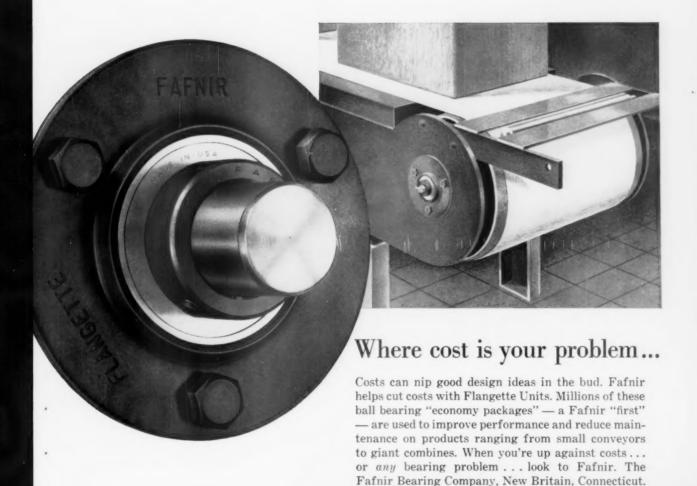




Look to

FAFRIR

for leadership in ball bearings



50 YEARS OF EXPERIENCE IN THE MANUFACTURE OF BALL BEARINGS FAFRINGS BALL BEARINGS



Dirt is cheap... but not when it gets into bearings. It handicaps production...runs up costs... shortens product life. How to keep dirt out? Disc harrow makers do it with Fafnir Ball Bearings... triple-sealed to "run clean" where it's dirtiest. When you're up against dirt... or any bearing problem... look to Fafnir for the diversity, the capacity, the research to find your answer. The Fafnir Bearing Company, New Britain, Conn.



FAFRINGS BALL BEARINGS



DIAGNOSIS: NON-CONTAINER-OSIS

CURE: AMERICAN AIRLINES PAUL BUNYAN BOX

American Airlines has the answer to your package problems—its exclusive Paul Bunyan Box.

Capacity? American has it—170 tons-worth in mobile all-aluminum Bunyan Boxes each day. Locked securely inside, your shipment is moved swiftly, efficiently—protected from handling and weather damage, free from pilferage. More than 113 cubic feet gives each box plenty of space for multi-package shipments—up to 2 tons. At your option, you can pack a Bunyan Box in your own factory or warehouse. No special equipment needed because it's mounted on its own roller-bearing

casters and can be positioned by manpower alone.

Creative service ideas like the Paul Bunyan Box are only one reason why more shippers move more freight on American than on any other airline in America. Another reason is service from AIRfreight professionals that guarantees your traffic expert handling.

When you ship by air, ship with the professionals—call American AIRfreight.

AMERICAN AIRLINES

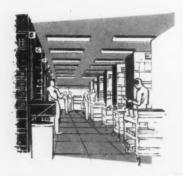
America's Leading Cargo Airline

For More Facts Write No. 175 on Information Card-Last Page

Can you afford to purchase hydraulics without these FOUR SERVICE BENEFITS?

WHETHER you're purchasing hydraulics for replacement of existing units or specifying components for new capital equipment—you are buying value over a period of time. You know that sooner or later, depending on type of service and hours of operation, the finest equipment of any type requires service.

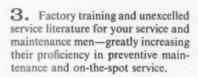
Your purchasing decisions will never be subject to criticism if you specify Vickers—because then you have these vital 4 service factors working for you for the life of your equipment:



1. Regional stock and repair service centers—minimize downtime for essential production machinery.



2. Help when you need it from skilled Vickers service men for startup, in-plant service and expert trouble-shooting.





4. Practical designs based on unmatched hydraulic experience and an unequalled reputation for manufacturing quality to insure long, troublefree life.



Remember too, if you are buying for or shipping to plants outside the United States, that Vickers parts made in plants throughout the Free World are completely interchangeable.

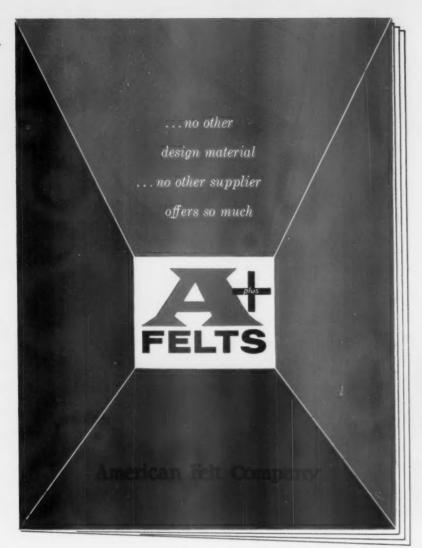
9795



Machinery Hydraulics Division

ADMINISTRATIVE and ENGINEERING CENTER

Department 1566 • Detroit 32, Michigan





Our new FREE brochure describes these multi-functional materials whose more than 850 types meet the most stringent specifications in thousands of applications. A+ Felts have ideal characteristics for absorbing, wicking, filtering, sealing, cushioning, polishing, friction, shock absorption, thermal and sound insulation, padding, surfacing, vibration isolation, percussion control and decoration.

Send today for your personal copy of this practical guide to A+ Felts . . . the problem-solving engineering and design material.



For More Facts Write No. 177 on Information Card-Last Page

American Felt Company

is A+ in

- SERVICE
- · QUALITY
- ENGINEERING and RESEARCH





A NEW HIGH NOTE IN HEEL FASHIONS

WITH COLD FINISHED STEEL BARS

Only steel could do the job. The designs for women's new super-slim, high-fashion heels required greater strength. Small diameters must withstand terrific pressure. The material must give, not break.

As have thousands of other manufacturers confronted with new product designs, heelmakers found the answer in a Bliss & Laughlin cold finished steel bar.

Bliss & Laughlin cold finished steel bars are used in countless products. They impart high strength with safety, from high-fashion heels to automobiles. They make small boys happy with sturdy bicycles and model engines. They help transmit power to huge earth-moving equipment and giant ocean liners.

Check out your designs with Bliss & Laughlin. As specialists in strength, finish, accuracy, straightness and machinability for 70 years, Bliss & Laughlin has recommended time and again the most suitable and economical bar from the industry's most complete line of cold finished steels.

Seven Bliss & Laughlin mills across the nation, collaborating with Steel Service Centers everywhere, assure highly personalized, local service!



GENERAL OFFICES: Harvey, III. MILLS: Harvey, III., Detroit, Cleveland, Buffalo, Mansfield, Mass., Los Angeles, Seattle

For More Facts Write No. 178 on Information Card-Last Page

Information For Your Catalog Files

AIR CONTROL PRODUCTS

Catalog No. 125 lists air control products for automating in-plant operations and for component use in new products. The 48-page digest-size bulletin includes air and hydraulic equipment such as cylinders, valves, rotating joints, regulators, and hose fittings. Has information on dimensions, flow rates, and operating pressures.

A. Schrader's Son

Write No. 1 on Information Card-Last Page

FANS

Bulletin No. A-1203 describes a line of HS fans. The 44-page, two-color catalog discusses construction features and covers available drive arrangements, configurations, and types of drive. Illustrates bearings, dampers, vanes, sound-absorbing bases, and drive speed control devices. Has capacity tables, outline type drawings, and a typical specification.

American-Standard

Write No. 2 on Information Card-Last Page

FASTENERS

A 162-page catalog on fasteners in stainless steel, brass, bronze, aluminum, and monel. Lists over 40,000 different sizes, styles, and types, including 15,000 stock items. Tells how quickly delivery can be made on non-stock items. Has an index of AN, MS, and NAS parts.

Albany Products Company, Inc.

Write No. 3 on Information Card—Last Page

FUEL PUMPS

Bulletin A-5242A describes fixed displacement vane-type fuel pumps. The six-page catalog includes photographs showing various configurations, typical performance curves, schematic diagrams, and a sketch showing principles of design. Specifications are given in tabular form.

Vickers Incorporated

Write No. 4 on Information Card-Last Page

HEAT EXCHANGERS

Folder 2911 describes Roto-Fin heat exchangers. The six-page bulletin has diagrams and photographs that illustrate the design. Also outlines typical applications.

Link-Belt Company

Write No. 5 on Information Card-Last Page

INDUSTRIAL GLOVES

A 20-page, full-color catalog on protective industrial gloves and finger cots. A chart offers a check on physical characteristics, such as tensile strength and heat resistance. Specifications are listed for approximate minimum thickness, length, weight, and size of each style.

Wilson Rubber Co.

Write No. 6 on Information Card-Last Page

INDUSTRIAL RELAYS

Bulletin GEA-7329 describes 10-ampere, 300-volt industrial relays. Photographs show how the relays are designed to make wiring and installations easier. Also covers relay inspection, maintenance, and modifications.

General Electric Company

Write No. 7 on Information Card-Last Page

LABORATORY APPARATUS

Catalog No. 161 covers laboratory apparatus, supplies, protective garments, magnetic stirrers, and plastic materials. The 40-page bulletin illustrates and describes over 300 products.

General Scientific Equipment Company

Write No. 8 on Information Card-Last Page

MACHINE TOOLS

Bulletin MT4 presents specifications and illustrations of a line of machine tools. The 20-page catalog includes milling, grinding, automatic, hand screw, and turret drilling machines. Also describes optional accessory equipment.

Brown & Sharpe Mfg. Co.

Write No. 9 on Information Card-Last Page

MAGNETIC DRIVES

Bulletin 3650 covers magnetic adjustable speed drives. Describes the basic components, theory of operation, controls, and design. Includes major features, such as the stationary field coil construction.

Louis Allis Company

Write No. 10 on Information Card-Last Page

POWER CYLINDERS

Bulletin AJH-104S covers air and hydraulic cylinders. The 32-page illustrated catalog provides data to select cylinders by size, thrust, bore, stroke, and mounting. Includes tables, charts on column strength, and safety factors.

Miller Fluid Power

Write No. 11 on Information Card—Last Page

POWER FUSES

Application Data 36-660 covers applications and selection of high-voltage power fuses. The 16-page booklet is a comprehensive guide for selecting the fuse best suited for various applications. Includes refill, drop-out, and current limiting power fuses. Has data on the interrupting ability, continuous current ratings, and melting characteristics.

Westinghouse Electric Corporation

Write No. 12 on Information Card-Last Page

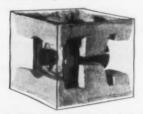
Want to cut package costs?
Want to cut packaging labor costs?
Want to cut BOTH?

SWITCH TO TEKMOLD®





Novelty calendar shows TEKMOLD ability to engineer enclosures for fragile objects of unusual shape.



Precision timer "floats" safely between TEKMOLD protective forms.



Radio in low-cost TEKMOLD for utmost shipping safety.

Protective Packaging that "floats" your products safely

Protection is the first reason for packaging your products in TEKMOLD, the custom-molded cellulose forms that provide a truly protective cushion.

When you can get major savings, too, you've really hit the jackpot.

Radio manufacturers, for example, report package savings up to 9 cents per unit on table models, and labor savings up to 3 cents per unit, after switching to TEKMOLD from multiple-piece, die-cut corrugated assemblies that must be laboriously hand-assembled. And those savings are typical.

TEKMOLD is adaptable. It may be the answer to *your* problem. For the complete TEKMOLD story, write, wire or phone us today.

TEKMOLD

2850 LINCOLN AVENUE DEPARTMENT P • PL 5-1664 MUSKEGON, MICHIGAN



"CALL FOSTER... THEY'LL SHIP PIPE PLUS"



Right! Whether it's a routine order or an emergency request for unusual or hard-to-get sizes, Foster gives you pipe "plus."

You get all your pipe when and where you need it, cut to length or fabricated in complete-package shipments, at lowest possible cost.

For non-pressure applications, check the unusual savings on Foster Structural Pipe. Foster's nationwide warehouses stock Tested & Structural Steel Pipe, 1/8" through 48" in all sizes and walls—"plus" Stainless, Seamless, Alloy, Pressure, Aluminum, Wrought Iron, PVC Pipe and Valves, Fittings, Flanges.

Write L. B. FOSTER CO. for latest Stock List PA-8
Pittsburgh 30 • New York 7 • Chicago 4 • Cleveland 35
Houston 2 • Los Angeles 5 • Atlanta 8



Faster From Foster

For More Facts Write No. 180 on Information Card-Last Page

Catalog Files

POWER SUPPLIES

A 16-page catalog containing exact specifications of power supplies. Includes power supply charts in which all factors are tabulated for easy checking. Has photographs and diagrams.

NJE Corporation

Write No. 13 on Information Card-Last Page

POWER TOOLS

Catalog AB-61 covers a line of industrial power tools and accessories. The 96-page bulletin also contains specifications and descriptions. Action photos and drawings supplement the text.

Rockwell Manufacturing Company Write No. 14 on Information Card—Last Page

TAPS

A catalog and handbook on taps. Illustrates and describes both standard and special taps. Includes a tap users' guide, trouble shooting section, resharpening instruction, glossary of terms, and many tables

Besly-Welles Corporation

Write No. 15 on Information Card-Last Page

URETHANES

A booklet presenting the versatility and variety of uses of pour-in-place urethanes. The 12-page publication describes typical applications and contains many illustrations. Also lists physical properties of formulations.

Nopco Chemical Company

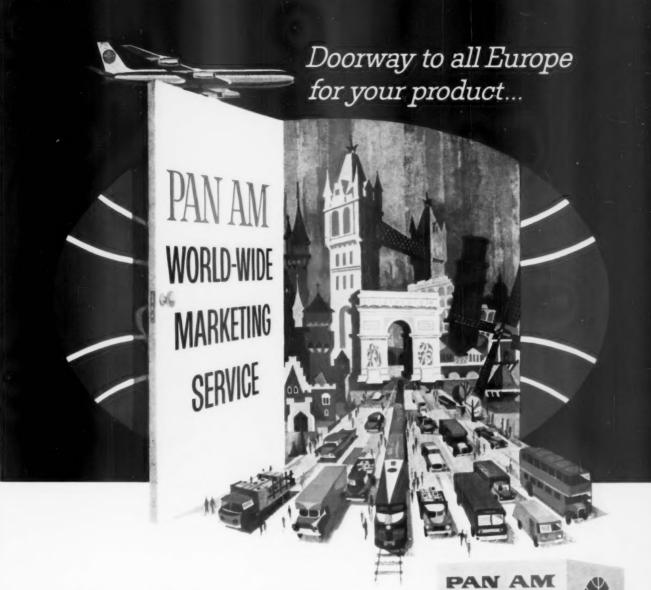
Write No. 16 on Information Card-Last Page

VARIABLE SPEED DRIVES

Bulletin 25103 covers two types of motion-control variable-speed sheaves. Pictures and describes "MS" sheaves rated from 2 hp to 15 hp and "MCS" sheaves rated at from 7.5 hp to 20 hp. The 16-page catalog also includes pulleys, variable-speed belts, and motion control motor bases.

T. B. Wood's Sons Co.

Write No. 17 on Information Card-Last Page



Now, in one step, the most complete overseas marketing service ever developed helps you do business with Europe's 343,000,000 consumers.

WORLD-WIDE INFORMATION WORLD-WIDE TRANSPORTATION Current, valuable, authoritative

- information on 114 world trade centers in 80 foreign lands! • Pan Am helps you get marketing facts - plus special needed information.
- Pan Am can help find markets for your product, also distributors, buyers, bankers overseas.
- · Pan Am advises all the way on containers, insurance, rates, routes, collections.
- Pan Am monthly magazine lets you in on "inside" information, overseas opportunities!

More flights direct to more major markets by the world's largest, fastest overseas air cargo fleet!

- Fastest delivery overseas, from 15 international gateways in U. S. plus faster, new ground procedures.
- · One source for documentation, plus world's largest international truck-air system, cuts red tape.
- · More space, speed! More all-cargo planes, and over-ocean Jets.
- Rates lower than ever! In more and more cases distribution by Pan Am costs less than by surface.

JET CLIPPER CARGO

THE WORLD'S MOST EXPERIENCED ANYLINE



WORLD-WIDE REPRESENTATION More American and English-speaking personnel to represent you and your product overseas!

- You get 114 world-wide offices—at no extra cost! Your product is handled the way you want.
- · American viewpoint on the spot from American-trained personnel with local market know-how.
- · World-wide contact service! Pan Am's integrated sales/service organization takes the hitches out of world marketing.
- World-wide follow-through makes world's surest delivery!

PAN AM PUTS YOU IN BUSINESS ABROAD - WITH ONE PHONE CALL!

4

PURCHASING PROBLEMS

ANSWER:

LONG DISTANCE

Running short of stock?

A call lets you shop your markets quickly, get the best buys.

Troubled by fluctuating market conditions?

Long Distance calling keeps you abreast of out-of-town changes.

Delivery date suddenly revised?

Calling cuts through delays and red tape. You find out exactly when merchandise will be shipped.

Order need special attention?

Long Distance calls provide personal two-way contact. You can be sure your supplier understands your needs.

Pick up your phone and prove these things to yourself.



BELL TELEPHONE SYSTEM

Long Distance pays off! Use it NOW . . . for all it's worth!

6 Features that make a big difference in counterboring operations!



1. HAND DETACHABLE . . . a twist of the wrist engages or releases the cutter after the severest cutting operation.



4. BALANCED DRIVE . . . double bearings—one on each side of drive lug—provide extra rigidity.



2. STURDY DRIVE . . . diametrically opposed drive lugs engage corresponding abutments in the holder.



5. FREE FROM OBSTRUCTIONS . . . holder body slips easily into a bushing or can be threaded for stop nuts or collars or fluted for lubrication.



3. EXTRA TORSIONAL RIGIDITY . . . drive lugs are close to seating shoulder of cutter for powerful, smooth operation.



PRACTICALLY INDESTRUCTIBLE

 no binding, no shearing—driving forces apply compression.



These are the features that make the difference in counterbores—six reasons why no one reports failure of a Continental Counterbore Drive!

L'ontinental



TOOL WORKS

DIVISION OF

EX-CELL-O CORPORATION DETROIT 32, MICHIGAN 60-45

think again





If you think that fasteners are "chicken feed", think again. Your costs mount up when you use faulty fasteners that slow down and stop assembly operations, or cause

Why not buy quality fasteners in the first place, and then your fastener costs will really be "chicken feed".

Order Southern Screws from your distributor, or write direct to Southern Screw Company, P.O. Bex 1360, Statesville, N.C.

Over 1,500,000,000 pieces in stock at factory and main warehouse in Statesville, N.C.

WAREHOUSES.

New York • Chicago • Dallas • Los Angeles

Machine Screws & Nuts • Tapping Screws •
Stove Bolts • Drive Screws • Carriage
Bolts • Continuous Threaded Studs • Wood
Screws • Hanger Bolts • Dowel Screws •
Speaker Screws



For More Facts Write No. 183 on Information Card—Last Page

Letters To The Editor

BLUE RIBBON EDITION

Dear Sir:

I have just finished reading the excellent articles in the 1961 Value Analysis Issue of Purchasing Magazine and wish to congratulate the editorial staff on an edition of which you can all be truly proud.

Although we are a relatively small company, we believe that the concepts of value analysis can be put to work in any organization, regardless of size.

> Martin M. Trendler Fischer Machine Company Philadelphia 7, Penna.

FREIGHT RATES

Dear Sir:

I recently read with great interest Thomas Dillon's article "Lower Freight Rates—But Are They Legal?" which appeared in your April 10 issue. Enjoyed it very much and found it extremely helpful.

J. S. Smith Springmeier Shipping Co. St. Louis 1, Mo.

SUPPLEMENTARY DATA

Dear Sir:

I am purchasing agent for a large wholesaler and jobber to retail laundries and dry cleaners and our business differs in many ways from manufacturers.

Can you tell me where I can get some information which deals strictly with the problems encountered by the non-manufacturing wholesaler? I would like to supplement the valuable information contained in PURCHASING Magazine.

R. E. Ausmus, Jr. Patek & Company San Francisco, Calif.

• The Distributors Buyers Group, an organization affiliated with the National Association of Purchasing Agents, may be able to assist you. For more information on this group write to: chairman A. J. Pinkston, Moncrief Lenoir Mfg. Co., P.O. Box 2505, Houston, Tex.

DISCERNING READER

Dear Sir:

We enjoy the feature "Forms Forum" and the many other interesting articles in Purchasing Magazine and read each copy from "Kiver to Kiver."

Howard A. Taylor
Battle Creek Packaging
Machines, Inc.
Battle Creek, Mich.

WHO PAYS FOR RETURNS?

Dear Sir:

Each purchasing man reading your magazine must have snorted with indignation as he read the statement that most material returns were made because of purchasing department errors (p. 63, May 22 issue).

Obviously, purchasing will contribute an occasional error because we are people handling thousands of items weekly, but I find myself unwilling to accept the dubious distinction bestowed upon purchasing by Mr. Whetstone.

He apparently isn't close enough to purchasing to realize that we buy only what is requested by others and certainly it is not our responsibility if two are ordered and only one is needed, or parts with wrong number specified (not to mention that most things are needed yesterday).

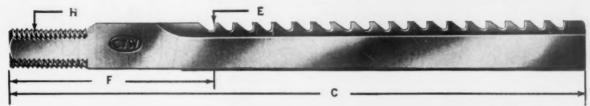
What about parts returned because they are no longer needed, replacement by improved design or a hundred other reasons?

The comment I do find acceptable is the reference to restocking charges as being irritating and especially so if from a regular supplier. I have many times expressed the opinion that a vendor enjoying a steady volume of business should accept an occasional return and issue full credit as a part of maintaining high level customer relations.

Generally I find your magazine interesting, informative and most worthwhile.

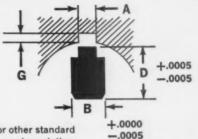
J. W. Tilden Crown Zellerbach Corp. Antioch, Calif.

CTW Keyway Broaches in Stock NOW for Immediate Delivery!



Continental now stocks a popular range of standard keyway broaches to help you meet production schedules faster than ever, and to let you cut your tool inventory.

Just call your CTW Representative, or order by catalog number direct from Continental. The broaches you need are in stock now—ready for immediate delivery to your plant!



Sizes listed below are available for immediate delivery. See the CTW Catalog for other standard broaches. Special sizes quickly made to order. Send your print for a prompt quotation.

Catalog		A (eyway Widt)	h	Min.	Min.†	Max.	Width	Total Broach	Height at Last	Height at First	Length	Keyway Depth	No.	Thread
Number	Nom. Dim.	Decimal Dim.	Toler- ance	Hole Size		Length Cut	Body B			Tooth	Shank F	in Part G	of Cuts	H
502	3/32	.0948	±.0002	7/16	1/2	1½	.1865	24	.367	.309	81/4	.058	1	5/16-18
504	1/8	.126	±.0002	1/2	1/2	11/2	.249	30	.438	.364	9	.074	1	3/8-1
505	1/8	.126	±.0002	11/16	5/8	21/2	.3115	36	.594	.520	10	.074	1	1/2-1
508	3/16	.1885	≠.0002	11/16	3/8	21/2	.374	36	.581	.476	10	.105	1	1/2-1
512	1/4	.251	⇒.0002	11/16	5/8	21/2	.374	36	.612	.476	10	.136	1	1/2-1
513	1/4	.251	±.0002	1	11/16	4	.499	45	.877	.741	1113/16	.136	1	5/6-1
514	1/4	.251	±.0002	17/16	3/6	6	.624	51	1.250	1.114	131/2	.136	1	3/4-1
517	\$/16	.314	±.0002	1	11/16	4	.499	45	.908	.741	1113/16	.167	1	%-1
519	3/8	.3765	±.0002	11/16	11/16	4	.499	45	.938	.739	1113/16	.199	1	3/8-1
520	3/8	.3765	±.0002	15/16	1/8	6	.499	54	1.189	.990	131/2	.199	1	5/8-1
523	1/2	.5015	±.0002	11/2	11/16	4	.624	48	1.312	1.051	12	.261	1	3/4-1
524	1/2	.5015	⇒.0002	11/2	1	8	.624	48	1.377	1.246	161/2	.261	2	3/4-1
ORIGIN	AL CTW	SERIES												
CTW 7	3/16	.1885	±.0002	11/16	1/2	21/2	.375	36	.581	.480	9	.101	1	1/2-
CTW 10	1/4	.251	⇒.0002	11/16	5/8	21/2	.375	38	.612	.480	9	.132	1	1/2-
CTW 11	1/4	.251	≠.0002	1	11/16	31/2	.500	44	.877	.740	10	.137	1	5/1-
CTW 14	5/16	.3135	±.0002	1	11/16	4	.500	46	.908	.740	101/2	.168	1	3/8-
CTW 17	3/8	.376	±.0002	11/16	11/16	4	.500	46	.938	.740	101/2	.198	1	1 1/8-
CTW 23	1/2	.501	±.0002	11/2	11/16	31/2	.625	46	1.422	1.160	10	.262	1	3/4-
ORIGIN	AL XLO	SERIES												
XLO 3	3/16	.1885	±.0002	19/32	18/32	1¾	.250	28	.541	.438	81/4	.103	1	3/8-
XLO 5	3/16	.1885	±.0002	5/8	5/8	2	.375	28	.541	.438	81/2	.103	1	1/2-





ACT

HARD RUBBER

the original plastic is the most **INERT**

Among the most chemically inert of all commercial engineering materials, hard rubber is immune to attack by most acid and alkali solutions and fumes.

STANDARD GRADES Good resistance to strong acids and alkalis is characteristic of Hard Rubber compounds in general. Many standard grades have excellent resistance. All grades withstand years of weathering with practically no change in properties. In addition, they are not affected by moisture or water. Many industries can thus profit by the combination of low cost and inertness offered by Hard Rubber.

SPECIAL GRADES Organic solvent attack
— often a major problem with plastics and

elastomers — can be successfully resisted by special grades compounded to far exceed the limited resistance of most standard grades.

An example of other tough problems that can be solved by Hard Rubber is the ACE-SIL Porous Acid-Proof rubber compounded by mixing processed rubber with silicahydrogel. This product is mainly used for battery separators at present but many applications where evaporating surfaces or wick-action parts are desirable may expand its use in the future. Perhaps you are looking for just such a material now.

■ Contact American Hard Rubber today. Tell us what and we'll tell you how.

INDUSTRIAL PRODUCTS SALES

American Hard Rubber Company

ACE ROAD, BUTLER, NEW JERSEY . Tel.: TE 8-1000





Hard rubber has excellent properties for electrical parts





Acid pump has molded hard rubber casing and gears, lasts for years.

Quality Controlled at Every Step!

Production parts bored, counterbored, spot-faced, milled, drilled, hardened and ground to your precise specifications

Check an Ex-Cell-O process sheet on any Ex-Cell-O precision production part, and you'll find that at every step, quality control is an important part of Ex-Cell-Ability.

Ex-Cell-O metallurgical laboratories test each run of stock and maintain a close watch on heat treatment methods and results. Non-destructive testing closely follows many Ex-Cell-O machining processes, and production inspection stations use the most modern equipment available.

If precision parts and assemblies are important to your product, your local Ex-Cell-O Representative has a quality control story that will be of interest to you. Call him soon, or simply send us your prints or requirements for a prompt quotation.

ume,

These precision parts are produced in volume, yet they are quality-controlled to custom work standards. Large photo above shows typical inspection equipment—a 30-inch Ex-Cell-O Contour Projector used to inspect parts at 100X magnification.





61-321

EX-CELL-O FOR PRECISION

PRECISION MACHINE TOOLS - GRINDING AND SORING SPINDLES - CUTTING TOOLS - RAILROAD PINS AND BUSH-INGS - DRILL JIG BUSHINGS - JIG AND FIXTURE COMPONENTS - TORQUE ACTUATORS - CONTOUR PROJECTORS CAGES AND GAGING COUIPMENT - GRANITE SURFACE FLATES - COMPUTER PRODUCTS - AIRCRAFT AND MISCEL-LAMEOUS PRODUCTION, PARTS - ATOMIC ENERGY EQUIPMENT - DAIRY AND OTHER PACKAGING EQUIPMENT

Precision Parts Division

RAILROAD PINS AND BUSH15- CONTOUR PROJECTORS
15- AIRBRAFT AND MISSEL15- PRECKACING EQUIPMENT

DETROIT 32, MICHIGAN

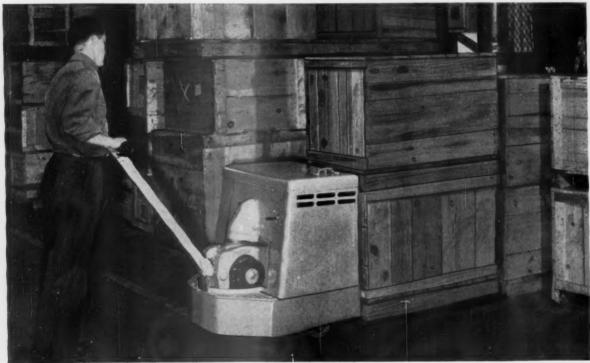
DETROIT 32, MICHIGAN

For More Facts Write No. 186 on Information Card-Last Page

EXIDE POWER PACKAGE

Exide Industrial Marketing Division, The Electric Storage Battery Company, Philadelphia 20, Pa. (ESB)





Extra economy assurance for your new walkie-type truck—the Exide guarantee of battery life equal to truck life.

BATTERY GUARANTEED FOR LIFE OF TRUCK

Let's say you're about to buy a new walkietype electric industrial truck. You want long battery life for maximum economy, and you don't want the nuisance of ever replacing the battery, if you can avoid it. Well, this is the Exide offer:

For walkie-type low lift trucks and hand tractors, the recommended Exide nickeliron-alkaline battery (the type invented by Thomas A. Edison) is guaranteed for the life of the truck—provided the truck remains in your possession and approved maintenance procedures are followed.



The Exide Power Package. Recommended battery and charger from the world's broadest lines --plus factory-quality service to cover both.

This is not a reckless offer. Exide knows from countless actual performance records that these batteries readily give this kind of life. Many Exide nickel-iron-alkaline batteries have been used in walkie-truck service for upwards of 20 years and are still going strong. So the plain fact is that we are simply giving you positive assurance of battery value that is already there anyway.

Long life is one of the characteristics of Exide nickel-iron-alkaline batteries. They have other unique advantages too. They are lighter in weight than other batteries. They give off no corrosive fumes during use or while charging. And they can be stored indefinitely without injury. This is of special value during seasonal shutdown or other inactive periods. All you do is discharge the battery, short-circuit the terminals and store in a clean, dry place.

Of course, for any type electric industrial truck—walkie, rider, or narrow-aisle—the maximum power economy depends on three factors: the right battery for the job, a charger to match, and needed service. This combination is the Exide Power Package.

Your Exide representative studies your requirements, then recommends the battery best for your needs from the broad Exide line. He is completely objective in determining your needs because Exide offers all types: Exide-Ironclad with tubular positive plates, Exide-Powerclad premium flat-plate, and Exide nickel-ironalkaline. Exide chargers are available in both motor-generator and silicon rectifier types and in sizes to cover all needs. Exide service men are coast to coast, all factory trained on batteries and chargers.

The Exide Power Package is your easiest way to get not only maximum battery life in your applications, but maximum battery economy year after year. Write for details. Exide Industrial Marketing Division, The Electric Storage Battery Company, Philadelphia 20, Pa.

Exide

For More Facts Write No. 187 on Information Card-Last Page

Coast to coast CONTAINER CORPORATION OF AMERICA designers and engineers are making more out of plastics. For packaging. For dispensing. For protecting. For attracting. For selling—products like yours. When you make your next packaging decision, we'd like to be on hand showing you how the Garmold Plastics Division can put the CCA Packaging System to work for you.

The Packaging System is a method of integrating all the elements that make a successful package: materials, structure, graphic design, machinery, research, marketing, printing and production.

CONTAINER CORPORATION OF AMERICA • 2525 MILITARY AVENUE, LOS ANGELES 64, CALIFORNIA LACKAWANNA AVENUE, TOTOWA BORO, NEW JERSEY 570 E. NORTH WATER STREET, CHICAGO 11, ILLINOIS

Purchasing People In The News

Thomas R. Laidlaw has been appointed purchasing agent by Inland Steel Products Company, Milwaukee, Wisc. He will be responsible for the purchase of steel and non-ferrous metals, machines, tooling, equipment and plant engineering requirements.

Mr. Laidlaw was formerly as-



Thomas R. Laidlaw

sistant purchasing agent for A. George Schulz Company, Milwaukee. He is a member of the Milwaukee Association of Purchasing Agents.

The New Jersey Zinc Company, 160 Front St., New York, announces two appointments in its New York purchasing department. Robert T. Lardon becomes purchasing agent of the commodities and engineering division and Frank A. Messenger, pur-



R. T. Lardon



F. A. Messenger

chasing agent of the ores and metals division.

Mr. Lardon is a civil engineer and a graduate of Virginia Military Institute. He holds an M.B.A. degree from New York University. Mr. Messenger is a veteran of 24 years' service with the Company. Both men are members of the Purchasing Agents Association.

Radiation Incorporated, Melbourne, Fla., has announced the appointment of James I. Markham as purchasing agent. Mr. Markham's new duties include overall responsibility for buying in Radiation's Florida operation, an active part in material pricing for proposals, and supervision of the purchasing department. He reports to the director of materials.

Mr. Markham joined Radiation



James 1. Markham

as a buyer in 1956, advanced to Senior Buyer in 1957, then to Chief Buyer in 1959. He was assistant purchasing agent for a coal mining concern in West Virginia before coming to Florida and is a member of the National Association of Purchasing Agents.

Mr. J. Raymond Berg, formerly purchasing agent, Buffalo Steel Corporation, Tonawanda, N. Y., has been appointed purchasing agent for The Carborundum Company's Coated Abrasives Division, Niagara Falls, N. Y.

Mr. Berg studied business administration at the University of Buffalo. Prior to his employment at Buffalo Steel Corporation, he was buyer for the National Gypsum Company and was also associated with the General Electric Supply Company in Buffalo.

J. Carl Nivus has joined Vickers Incorporated, Division of Sperry Rand Corporation, and will be in charge of purchasing at the firm's Omaha, Neb. plant.

Mr. Nivus has over 16 years' experience in the purchasing field,



J. Carl Nivus

serving with various firms in the construction equipment, machine tool and steel industries. Prior to joining Vickers he was head of purchasing at the Brainard Steel Division of the Sharon Steel Company and is a graduate of the Oberlin School of Commerce.

Whiting Corporation, Harvey, Ill., recently announced the appointment of R. W. Begnoche as director of procurement and H. J. Pierie as purchasing agent.

Mr. Begnoche, who joined Whit-



R. Begnoche

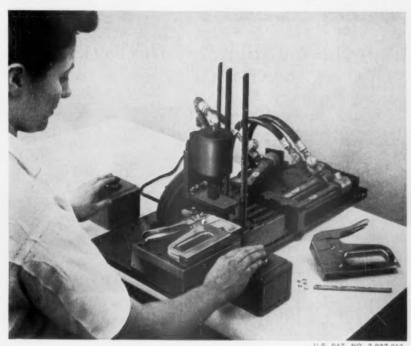


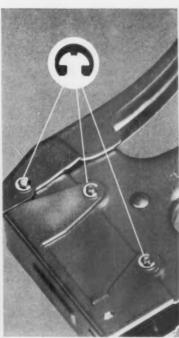
H. Pierie

ing in 1922, formerly held the title of purchasing agent. Mr. Pierie, with Whiting since 1951, was formerly the assistant purchasing agent.

SEE PAGE 172 FOR MORE PURCHASING PEOPLE IN . THE NEWS

Here's how ARROW FASTENER Co. gets Truarc Retaining Rings FREE!





Mechanized Ring-O-Mat® designed by Truarc Engineers doubles stapler production for saving of \$2500/year

Arrow Fastener Co., Inc., Brooklyn, N. Y., uses three Truarc Series 5144 reinforced E-rings to secure components in its Model T-50 compression stapler. Originally, Arrow operators installed the rings by hand with conventional applicators and dispensers. Fast? Sure—but Truarc engineers suggested to the company how the job could be done even faster and more economically by mechanizing the entire ring assembly operation.

Working closely with the Arrow engineering and production staff, Truarc mechanization engineers designed the unique Ring-O-Mat shown above. The unit installs the three E-rings in a single operation, twice as fast as the former hand method. Savings with the equipment are \$2500 a year — enough to pay for all the rings the company uses!

Here's how the Ring-O-Mat works. The Truarc rings are supplied in tape-wrapped Rol-Pak® cartridges which are loaded on vertical magazine rails at the center of the unit. To install the rings, the operator merely places the stapler in a nest at the front and pushes the control buttons . . . the Ring-O-Mat does the rest! Applicators connected to the air cylinders grasp the bottom ring in each stack and move forward, seating the rings in accurately located grooves pre-cut in pivot pins extending through the body of the stapler. When the rings are fully seated, the applicators are withdrawn automatically and the operation is completed. Simple, fast, fool-proof - a typical example of how Truarc retaining rings lend themselves to mechanized assembly. A good example also of how you get more than a fastener when you buy Truarc!

Interested in getting your retaining rings FREE?

Bulletin 459-13 describes a number of assembly techniques for mass-production ring installation. Write for a copy or see your Truarc representative.

WALDES KOHINOOR, INC.

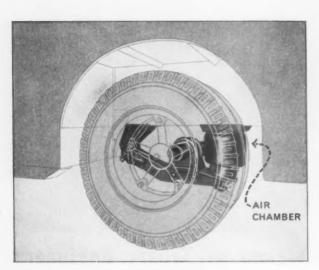
47-16 Austel Place, Long Island City 1, New York

61-5





Give fragile and high-value shipments the extra protection of MAYFLOWER "AIR-RIDE" vans





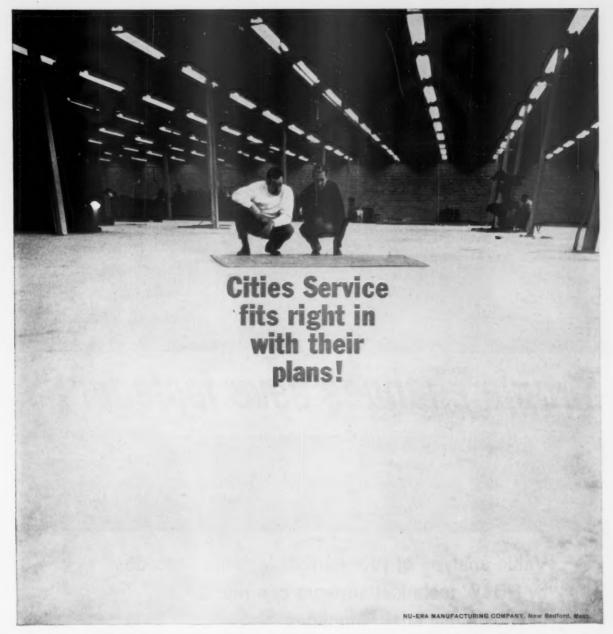
Mayflower "Air-Ride" suspension on its vans absorbs shocks and vibrations.



• Fragile, sensitive products, prototype exhibits, all your high-value shipments call for extra precautions. Modern Mayflower vans with "Air-Ride" provide riding qualities unequalled by ordinary equipment. Special Mayflower vans also feature higher, wider doors and greater safety of new Aeroquip nylon strap tie-offs. They can be double-decked and have specially-engineered auxiliary floors. Manned only by veteran "Accredited" van operators and backed by America's number one dispatching, Mayflower equipment is versatile enough to handle almost any kind of fragile or high-value shipment . . . safely, easily and economically. Give your local Mayflower agent a call!

AERO MAYFLOWER TRANSIT COMPANY, INC. . INDIANAPOLIS, INDIANA

For More Facts Write No. 190 on Information Card-Last Page



There's a bright future ahead for Nu-Era, manufacturer of replacement gears. The firm recently built this huge plant to handle increased orders... and Cities Service definitely fits in with their plans. Says General Manager Bill Rebone, "At first, all cutting oil brands seemed to be the same. However, we soon realized that Cities Service oils were giving us superior performance in every respect. Most of our gears are made of #5135 steel, a real tough customer to work with. Yet, we find we're getting long tool life, extra clean cuts with Cities Service Chillo 30 Cutting Oil." Nu-Era now relies, exclusively, on Cities Service for their metal machining fluids. Find out how Cities Service can fit in with your plans. Simply contact your nearest Cities Service office or write: Cities Service
Oil Company, 60 Wall Street, N.Y. 5, N.Y. CITIES (A) SERVICE

Out Front in Quality ... Out Front in Service, too!



Simple changes save fastener \$\$



Value analysis of your current fastener practices by RB&W technical advisors can result in substantial cost reductions

Here are typical savings made possible through recommendations by RB&W fastener specialists...made after carefully analyzing product design and assembly upon request.

Cost Reductions Made Possible
\$97,000 per year \$16,500 per year \$ 7,800 per year \$12,000 per year

The striking thing about all these cost reductions is that they required merely a substitution to be realized ...a standard high strength bolt rather than a special alloy fastener

...a hex screw in place of a socket screw. No product design changes were involved.

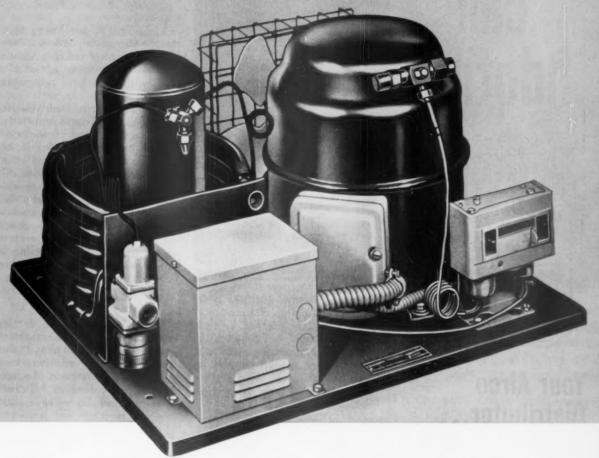
How about a survey of your own fastening operations? Wherever fasteners are used in quantity, there are bound to be areas where you can shave costs simply by having assembly specifications altered. An RB&W fastener specialist, working with your engineers, can locate them for you. He's no smarter than your own people, but knows his specialty best and also what to look for. Write Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N. Y.



Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Sales office and warehouse at: San Francisco, Calif. Additional sales offices at: Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas.

For More Facts Write No. 192 on Information Card-Last Page

Wild Div... Producer of Refrigeration Condensing Units ... uses Wolverine Tube



OLVERINE CAPILATOR®—the tiny, precision-made capillary tube for effective metering of liquids and gases - is an important contributor to the success of the hermetic condensing units manufactured by Tecumseh Products Company.

Tecumseh-one of the prominent producers of refrigeration compressors and condensing units uses Wolverine Capilator in its highside control system. Wolverine seamless copper tube is also used in suction and connecting lines.

So that it will meet the performance standards of Tecumseh and other American manufacturers, Capilator is always plug-drawn to insure smooth, mirrorbright inside diameters. Its ends are chamfered for unimpeded flow and, for maximum cleanliness, each length is washed in solvent, purged with "dry" air and has the ends paper wrapped. Capilator's manufacturing tolerances are rigidly controlled to meet customer's stated flow requirements.

If your company uses seamless copper, copper alloy or aluminum tube why not follow the lead set by Tecumseh and other leading American companies-specify Wolverine. Write, too, for your free copy of the Wolverine Tubemanship Booklet.



FOR GAS WELDING AND CUTTING



Your Airco Distributo

To get the most versatile welding and cutting torches in the industry (including the famous "800") - or welding and brazing rods all Airco engineered for your job - call your Airco Distributor. To get a high quality welding and cutting outfit at the right price - regulators portable shape cutting machines—or high purity gases-see your Airco Distributor. Here's headquarters, too, for arc weld-

ing electrodes and equipment - gas shielded arc welding process equipment

and arc welders.

Phone your Airco Distributor. He's listed in your Classified Telephone Directory under "Welding Equipment and Supplies."

AIR REDUCTION

... represented by over 700 Authorized Airco Distributors from Coast to Coast

For More Facts Write No. 194 on Information Card—Last Page

FOB-"filosofy of buying"

FOR SOME very frank and penetrating comment on what may be developing into a dangerous trend, get hold of a copy of Bob Doyle's editorial, "The Whale Swallows Jonah," in the July issue of The Chicago Purchasor.

"Combining purchasing and sales into one department is like putting oil and water in the same beaker," Bob begins. "But that's what one company has done. The integration of the two departments was done because it was felt they shared common interests and their activities were interrelated. That certainly is true. Purchasing and sales are like a double head on one body, but the fact that they are both heads is about all they have in common. One might say the opposite poles of a magnet have a common interest too, but it would benefit nobody if one pole were merged into the other."

We're solidly in support of Bob's main argument: "A company benefits when both the sales function and the purchasing function are actively engaged, even if they are engaged in conflict with each other. At least there are two opinions, two fields from which come two points of view. If the two departments come under one head, there will be one point of view, one road with no alternative. This is not good, or healthy, for sales, for purchasing, or for the company."

A. T. TRIPP, purchasing agent for the City of San Antonio, Texas and president of the San Antonio Association, received a nice plug in The Light, a local newspaper, recently.

Feature writer Dick Balmos described how Tripp's department operates and some of the more dramatic cost reductions it has made on behalf of the city's taxpayers. Balmos' conclusion: "It is impossible to tabulate or estimate the savings the city has effected in recent years as a result of tightened purchasing procedures. But one thing is certain. Other cities are now turning to San Antonio to learn how they can benefit from our experience."

HE LAST time we carried something here from the magazine The American Salesman it was widely and wildly misinterpreted (a salesman's conception of a purchasing agent done in ludicrous cartoon form.) So we're a little



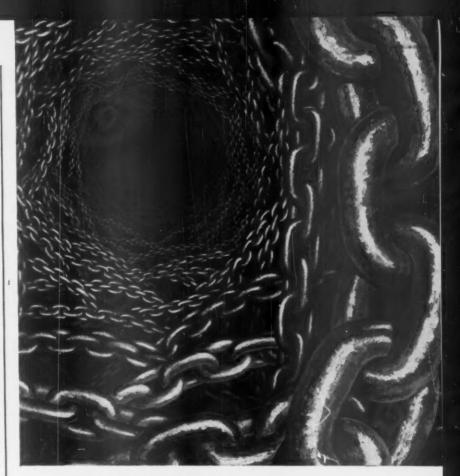
". . . No I didn't select him. I thought you people did."

cautious about this latest release from the magazine, but the temptation to comment on it is just too great.

Two thirds of the professional salesmen recently interviewed by The American Salesmen said that business lunches, on the average. came to \$5 or less, including drinks. Now that statement might be greeted by the average P.A. with a yelp or a yawn, because we're not told whether the figure covers only his own lunch or lunch for two or more. If it's the latter, we can deduce only one thing: more and more salesmen are entertaining their prospects with salami sandwiches and cold cans of beer from the corner delicatessen. The five-dollar lunch (with drinks) for two went out with the nickel subway ride.

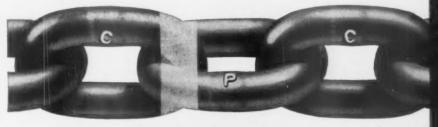
Another statistic that might raise a few eyebrows: 74% of the salesmen said they enjoy entertaining—would entertain customers even if they didn't have to. Like the ones who keep on sending Christmas cards after the buyer has left the purchasing department?

HE Filosofer recently called at the offices of the Purchasing Officers Association, British equivalent of N.A.P.A., located on Wardrobe Court, off Queen Victoria Street in London. We had long been familiar with this address, from previous correspondence, and were intrigued by it as another of those quaint English place names like Chipping Camden or Moreton-on-Marsh. However, we found that there really is a courtyard behind the building, and a historic marker records the fact that some centuries ago this was the site of the King's Wardrobe. Further inquiry brought forth the information that in those days the term "Wardrobe" meant a supply depot or general storehouse and that the Master of the Wardrobe was the counterpart of a Chief Storeskeeper today. So, by appropriate coincidence, the present headquarters of Britain's purchasing men is located on the traditional site of the national stores department.



COOL OPERATOR... that's Campbell Chain in wet process cement kilns, because of its excellent heat transfer properties and high resistance to abrasion. Campbell Kiln Chain is one of many specialty items in the *complete* Campbell line of quality chain and chain assemblies, in every size and grade, to meet *your* particular needs.

Here is another example of a Campbell Chain development:



CAMPBELL "HALLMARK" CHAIN — When you buy Campbell's "Hallmark" Chain you can see exactly what you're getting! It's permanently identified two ways: By GRADE—the grade mark is on alternate links; By MAKE—the Campbell "C" is on every other link ... also with "MEASURE-MARK" every five feet for your convenience.

For further information, contact your Campbell Wholesaler, or write direct



CAMPBELL CHAIN COMPANY

3 FACTORIES: York, Pa.; West Burlington, Iowa; Union City, Calif.

WAREHOUSES: Medford, Mass.; Atlanta, Ga.; Dallas, Texas; Chicago, Ill.; Portland, Ore.; Seattle, Wash.; Los Angeles, Calif.

THE ONLY CHAIN COMPANY WITH FACTORIES AND WAREHOUSES COAST-TO-COAST

Keep jobs moving with...

THERMOID Big 7 belt and hose

Thermoid can fill your specific need for hose or belt from the broadest line of belting in the industry and a hose line that covers every industrial application. Thermoid's reliability and availability on a moment's notice keep production on schedule by holding down-time to a minimum. Call your industrial distributor today for the right Thermoid hose or belting for any industrial use.



HOSE FOR AIR with high burst resistance -Have tough, serviceable high-tensile yarn and/or wire reinforcement and provide strong burst resistance. Neoprene tubes and covers. Working pressure range from 160 to 400 p.s.i.



VERSICON ... molded cover

HOSE FOR WATER SUCTION OR DIS-CHARGE-Hose for either heavy-duty suction or discharge serv-

ice withstands full vacuum and direct connection of centrifugal or piston pumps. Give long service in all industrial applications.

HERCULES

wrapped cover



AQUAIR molded cover



AINLINER UTILIT



VICTOR CL for heavy duty





oil-resistant tube and cover



COTTON COVERED oil-resistant tube



LOW PRESSURE
...molded oil-resistant
cover and tube

vacuum gauge lines, grease lines and many other applications.

HOSE FOR HYDRAULIC FLUIDS stands high pressure-From high pressure applications for hydraulic jacks, riveting machines, dump trucks to low pressure uses for air tools, air and



IRONSIDES one layer braided steel



SUPER EBONITE wrapped, five plies of duck



EBONITE wrapped, four plies of duck



HOSE FOR STEAM withstands heat and pressure-Features range from heat resisting tube, horizontal wire braid reinforcement to cotton duck plies. Suitable for hot water service. Working pressures from 100 lbs. to 200 lbs.



HOSE FOR WELDING remains freeflowing longer-Tubes insure free flow of gases. Will not scale, flake or peel. Brass female swivel barbed inserts

with standard welding 9/16" equipment threads, attached with brass ferrules. Meets RMA-IAA specifications.



THUNE . securely bonded to resist separation



350 L.P. GAS

L.P. VAPOR LINE . oil-resistant tube

HOSE FOR BUTANE-PROPANE resists permeation-LP gas hose for distribution and customer service. Resist volatile gas permeation. For vapor release lines and loading tank cars, domestic tanks, bottles and cylinders. Working pressures 300 to 350 lbs.



HOSE FOR ACIDS AND ALKALIS with high resistance-Suction and discharge hose in all types for industrial

use, including chemical and steel plants. tanneries, fertilizer plants. acid manufacturing plants.





FIRE HOSE withstands'pressure and usage—A complete line of fire hose, each to meet specific service conditions—both municipal and industrial. Lightweight, flexible, easy-to-handle, resists hard use.



PETROCHEM
... 100% polyester
fiber jacket



PORTER D. J. DELUXE
... bonded polyester
fiber jacket



DELAWARE .. double jacketed



THERMOID Big conveyor belts for any type of material



BELTING FOR HOT MATERIALS

Kaloric. Withstands temperatures to 350°F. Recommended for slag, cement, etc. In Neoprene or Butyl heat resistant cover compounds.

Tricircle. Resists heat up to 225°F. Handles near-glowing chunky material such as Hot Coke. Special Buna Scover resists heat that hardens and cracks ordinary covers.

BELTING FOR OILY MATERIALS—Victor Neoprene. Resists abrasion and oily conditions. High quality impregnated duck with neoprene skim between plies. Cover has high adhesion properties, weathers well.





BELTING FOR FOOD-STUFFS — Foodmaster. Resists vegetable and fruit acids, imparts no odor or taste to foods. Friction pull 16 to 19 lbs. Rubber cover tensile 1700 to 2000 lbs. Meets F.D.A. requirements.



BELTING FOR ABRASIVE MATERIALS

Victor. Outstanding natural rubber belt for use where high tensile strength is required. Friction pull 20 to 24 lbs. Rubber cover tensile strength 3500 to 4000 lbs. In 6" to 72" widths in all cotton-rulon and cotton fabrics.

Ebonite. Excellent cold rubber belt for highly abrasive materials, Friction pull 16 to 19 lbs. Cover tensile 2500 to 3000 lbs. Breakers available for maximum resistance to impact tearing and gouging. Hercules. An economical belt for moderately abrasive materials Has 800 to 1000 lbs. tensile cover. Ply adhesion of carcass rated at 12 to 15 lbs. average.

Plasticoal. General purpose P.V.C. belt for coal mining use. Superior resistance to moisture and mildew, excellent resistance to edge wear and rips, superior flexibility, easy to handle in low coal seams. Also bears the U.S. Bureau of Mines designation #28-11. Can also be supplied in neoprene construction.

Thermocoal. Specifically for underground coal mine use. Bears U.S. Bureau of Mines designation #28-11 by meeting or exceeding after-flame and after-glow requirements. All neoprene construction.

THERMOID POWERFLEX AND POWERFLEX WEDGE, FRACTIONAL AND MULTIPLE V-BELTS

Static-resistant fractional and multiple V-belts in a variety of styles. Provide higher percentages of delivered power and offer top performance. Full size range. Write for complete details.

THERMOID DIVISION



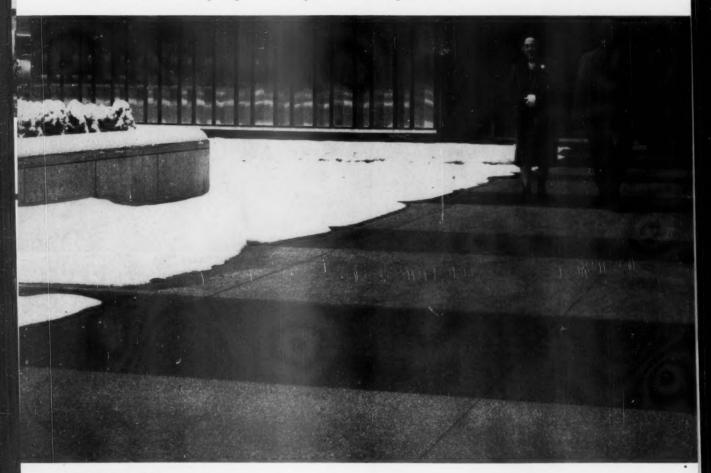
H. K. PORTER COMPANY, INC.



END THIS... Removing snow by shoveling, or with salt, chemicals or cinders costs you money. It ties up manpower which could be used more productively. And you run the risk of over-exertion or injury.

Chemicals and salt erode paving. Cinders require a

clean-up job at the first thaw. None of these methods will really do an efficient job; there's still the danger of someone slipping on an icy patch. What's more, your business can be delayed due to snow-covered drives and loading-dock areas.



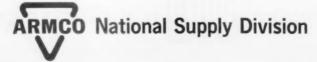
WITH THIS . . . There is a better way — with a SPANGRID Steel Pipe snow melting system.

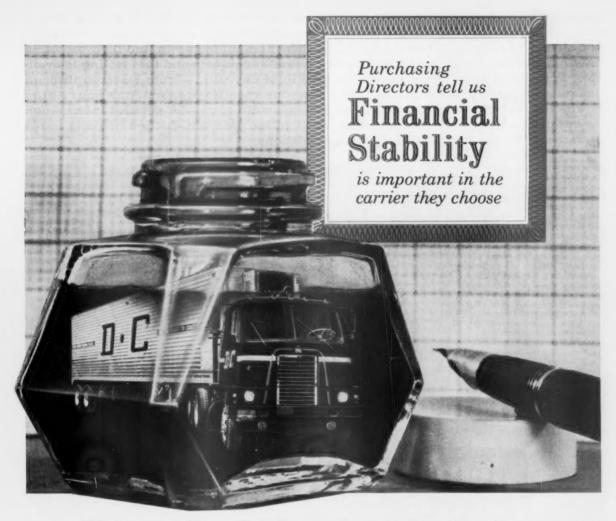
Here's a walk with a built-in snow melting system of pipe grids under the paving. It's hooked into the building's steam heating system. At the first sign of snow, the system goes to work and *automatically* melts the snow as it falls.

A SPANGRID Steel Pipe snow melting system costs less than you would think. In the long run it will pay for itself in materials, maintenance and manpower that's saved.

With SPANGRID, you get a dependable, top-quality steel pipe especially constructed for snow melting installations. Consult your piping contractor for complete details. Be sure he specifies SPANGRID Steel Pipe.

SPANGRID Steel Pipe is one of the many fine products produced by National Supply Division, Armco Steel Corporation, Two Gateway Center, Pittsburgh 22, Pa.





Shippers "in the know" respect the fact that properates in the black!

Businessmen know from experience that a financially healthy company is a good one to do business with. Selecting a bank or choosing a supplier, you look for careful management, progressive thinking, efficient operation.

When you invest valuable time and money in transporting raw materials or finished products, it makes equally good sense to entrust them to a successful carrier!

Last year, D-C again maintained an impressive operating ratio while moving more than a billion pounds of freight. That's why D-C has money to plow back into new

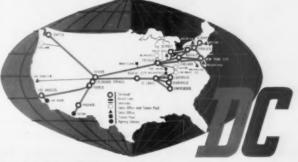
equipment, preventive maintenance, expanded terminal facilities.

With million dollar morale top to bottom and coast-to-coast, D-C specializes in service that benefits everyone. More daily schedules from 18 key cities. Less time on the road or in a terminal. It's the service you'll profit from when you choose the Dependable Carrier for your next shipments!

DENVER CHICAGO TRUCKING CO., INC.



the ONLY direct coast-to-coast carrier!



For More Facts Write No. 198 on Information Card-Last Page

WHEN: YOU NEED SPECIALS If your product calls for special bearings or hardened and ground precision parts, Aetna's many years of specialization in these areas can save you money. In fact, many times, original equipment manufacturers find their problems have already been studied and resolved by Aetna's engineers and that tooling is available. For other special units, Aetna can step in at any point-from research through design, testing, or production, to help solve your specific problem. Ask your Aetna representative—listed in your classified telephone directory—for detailed information on our design and production facilities, and outline your anti-friction or parts needs for our study, consideration, and recommendations.



AETNA BALL and ROLLER BEARING COMPANY DIVISION OF PARKERSBURG-AETNA CORPORATION | CHICAGO 39, ILL.

4600 SCHUBERT AVE.



ANTI-FRICTION SUPPLIERS TO LEADING ORIGINAL EQUIPMENT MANUFACTURERS SINCE 1916

For More Facts Write No. 199 on Information Card-Last Page

Calendar of Coming Events

AUGUST												
S	М	T	W	T	F	S						
		1	2	3	4	5						
6	7	8	9	10	11	12						
13	14	15	16	17	18	19						
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SEPTEMBER												
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- Aug. 28-Sept. 1. American Society of Mechanical Engineers: Second International Heating Conference, University of Colorado, Boulder, Colo.
- Sept. 11-15. Instrument Society of America: 16th Annual Meeting, Fall Conference & Exhibition, Los Angeles, Calif.
- Sept. 12-14. Plant Engineering & Maintenance: 3rd Southeastern Show, Greensboro Memorial Coliseum, Greensboro, N. C.
- Sept. 14-15. American Society of Mechanical Engineers and American Institute of Electrical Engineers: Engineering Management Conference, Hotel Roosevelt, New York, N.Y.
- Sept. 18-20. Standards Engineers Society: Tenth Annual Meeting, Hotel Sherman, Chicago, Ill.
- Sept. 21-22. Missouri Valley Electric Association: Purchasing & Stores Committee, Sheraton Jefferson Hotel, St. Louis, Mo.
- Sept. 25-26. Steel Founders' Society of America: Fall Meeting, The Homestead, Hot Springs, Va.
- Sept. 25-28. American Welding Society: Fall Meeting, Adolphus Hotel, Dallas, Texas.
- Sept. 26-28. Institute of Sanitation Management: Sanita-

- tion Maintenance Show, Hotel Sheraton, Philadelphia, Pa.
- Sept. 27-28. American Die Casting Institute: Annual Meeting, Edgewater Beach Hotel, Chicago, Ill.
- Sept. 28-29. American Production and Inventory Control Society: 4th Annual National Conference & Technical Exhibit, Pick Congress Hotel, Chicago, Ill.
- Oct. 2-6. National Hardware Show, McCormick Place, Chicago, Ill.
- Oct. 9-11. National Electronics Conference, International Amphitheatre, Chicago, Ill.
- Oct. 10-12. American Standards Association: 12th National Conference on Standards, Rice Hotel, Houston, Tex.
- Oct. 23-27. National Business Show: Coliseum, New York City.
- Oct. 23-27. American Society for Metals: Cobo Hall, Detroit, Mich.
- Oct. 18-20. National Packaging Forum: Twenty-third Annual Meeting, Biltmore Hotel, New York, N. Y.
- Oct. 18-20. Purchasing Agents
 Association of Tulsa and
 University of Tulsa: Fourth
 Petroleum Industry Purchasing Management Semiinar, Western Hills Lodge,
 Tulsa, Okla.

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Union, N. J. · Wethersfield, Conn.

Detroit, Mich. · Melrose Park, Ill.

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WHEN YOU NEED SPECIALS If your product calls for special bearings or hardened and ground precision parts, Aetna's many years of specialization in these areas can save you money. In fact, many times, original equipment manufacturers find their problems have already been studied and resolved by Aetna's engineers and that tooling is available. For other special units, Aetna can step in at any point-from research through design, testing, or production, to help solve your specific problem. Ask your Aetna representative—listed in your classified telephone directory—for detailed information on our design and production facilities, and outline your anti-friction or parts needs for our study, consideration, and recommendations.



AETNA BALL and ROLLER BEARING COMPANY DIVISION OF PARKERSBURG-AETNA CORPORATION | CHICAGO 39, ILL.

4600 SCHUBERT AVE

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Calendar of Coming Events

AUGUST												
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PETERSON STEELS, INC.

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OIL SEAL STOCK NUMBERS TELL YOU SHAFT SIZE IMMEDIATELY!



There's no catalog reaching and part number seeking when determining shaft sizes for C/R oil seals. You can tell from the stock number immediately.

Take the number on the illustrated box above: 13830—this C/R seal fits a shaft with a diameter of 13/6" or 1.375". Easy, isn't it? C/R has the only numbering system in the industry that makes sense. Besides this, C/R part numbers are included on the inside of the tuck-in flap on the box for cross reference.

The C/R catalog is simple and easy to understand, too, making ordering and identifying a pleasure for a change. Here's a corner from the C/R catalog—showing all the valuable information (including shaft dia.) needed to get the correct C/R oil seal replacement. Be sure you have your C/R oil seal catalog.

OR REACHING FOR THE C/R CATALOG

SECTION 1

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SECTION 1

To be the control of the MARIA STATE OF THE CATALOG OF THE CATA

Remember to keep downtime costs at a minimum...always replace—never re-use old oil seals. Your source for new C/R oil seals is your C/R Bearing Specialist—a valuable member of your engineering and maintenance teams.

SEAL OF PROVED PERFORMANCE



CHICAGO RAWHIDE MANUFACTURING COMPANY

SERVICE SALES DIVISION . CHICAGO 22, ILLINOIS

In Canada: Chicago Rawhide Products Canada Limited, Brantford, Ontario . Export: Geon International Corp., Great Neck, New York

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- PURCHASED PARTS DISPLAY TELLS ALL—Vendors don't have to guess at what GM's Sagiraw Steering Division purchasing department wants in the way of price and value. Volume purchased parts are displayed regularly in a large area, along with a handbook that lists every part number, description, function, and approximate annual usage. "Can you suggest ways to improve the quality and reduce the cost of these items?" purchasing asks. "Check the display often, because other items will be shown."
- KEEP AFTER PACKAGING STANDARDIZATION—How many times are purchased parts moved from container to container before they reach the production line? If it's more than once, check your vendor's packaging. If he can standardize on containers that can be rested, for example, so that parts don't have to be transferred to storage racks, you'll eliminate one costly materials handling operation. And you may be able to cut down on the number of different types of lift trucks you need in the plant.
- WHAT MORE CAN A VENDOR DO?—The idea isn't exactly new, but you may have been neglecting it lately: a survey of vendor facilities. Companies are merging, expanding, and diversifying rapidly. Keep yourself informed about what they can do for you by making regular checks on their capacities, special skills, new departments, product lines, plans for the future, etc. You'd be surprised how often a salesman will fail to keep you up on company developments that might be of help to you.
- GOT AN IDEA? PUT IT ON A PEGBOARD—The pegboard as part of a value analysis display is standard equipment in many purchasing departments. But there are many other ways this simple device can be used effectively right in your department—for rotating displays of educational material, performance charts, company products, etc. One word of warning: if you use the board, keep it attractive and up to date. Change exhibits around before they get stale and dusty, post a real surprise occasionally.
- WANT TO CUT DOWN ON LETTER COSTS?—The cost of a typed letter is already high, but it shoots 'way up when a typing error is made.

 Help your harried typists by supplying them with some of the new items for correcting typing mistakes easily and quickly.

 One is a white coated paper that is placed over the mistake.

 When the same key is struck against the paper, the mistake on the original is eradicated. Another is a white fluid that is painted over the original, leaving a clean space so that the right letter can be typed in.

August 28, 1961



Enjay bends every effort to bring you on-time deliveries

Enjay products follow the fastest path to your plant, using whatever transportation facilities are needed to meet your delivery requirements on time.

Coastal ships carry Enjay chemicals to major U.S. ports. Push-tow barges travel the inland waterways, while pipelines provide an integral link to many of our customers. Tank cars and

tank trucks reach every corner of the country with high-quality Enjay products.

From supply points strategically located coastto-coast, Enjay speeds its products to you. If dependable deliveries are important to your operations, it will pay you to learn more about Enjay. You can do so by writing to Enjay at 15 West 51st Street, New York 19, N.Y.

EXCITING NEW PRODUCTS THROUGH PETRO-CHEMISTRY

ENJAY CHEMICAL COMPANY

A DIVISION OF HUMBLE OIL & REFINING COMPANY

ENJAY)

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What Good Are Reports?

To give a sensible answer to the Britons' questions, we have

to ask ourselves several other questions: Is the information we collect in reports of value to ourselves and to our management? Is it being reported properly, or are we misusing or abusing reports? Are the reports producing the results we expect from

Only if the answer to all three is "yes" can we justify the use of a form or a report that takes more than a few minutes of a buyer's time.

Cost reduction data, for example, is definitely of value to purchasing and management. It should be reported regularly. (Don't fall for the argument that management will hear about it anyway. Management will hear about your failures, but you are the only one who will report your achievements.) But cost reduction reports that are doctored versions of routine activities are foolish and dangerous. And if the reports and the buyers who make them are not properly evaluated-not merely on the basis of dollar volume, but on imagination and skill-they eventually will cause you trouble by breeding discontent instead of healthy competition among buyers.

So it is with any other reports. If in your judgment they are worthwhile and producing results, you need not feel guilty about asking your people to spend time on them. But if you can't honestly justify them, get rid of them before you're buried by them.

PURCHASING MAGAZINE August 28, 1961



Don'T YOUR CHAPS have enough to do without being forced to make all kinds of reports on what after all are their routine activities?"

"Don't you need armies of clerks to handle all the paperwork involved in making reports and filling out forms?"

"Why go to the bother of inundating management with a mass of information already available to them through other channels?"

These are questions a number of British purchasing officers put to me during seminars conducted for Materials Management International. The questioners were curious about some of the techniques becoming popular in American purchasing departments. Their comments were more inquisitive than critical, but were very much to the point. They were particularly concerned that we might be wasting our time and effort on such things as cost reduction reports and vendor evaluation reports.

auf V. Farrell

How Much Should Purchasing Cost?

By Dean Ammer,

Executive Editor

THE AVERAGE purchasing department spends \$4.68 to issue a purchase order. Its operating costs amount to less than one percent of its purchases—specifically 0.8%.

Purchasing Magazine arrived at these averages from a survey it sent to 2,500 P.A.'s in all types of industries. If you're interested in seeing how your department compares with the average, here's how to do it:

(1) Add up your annual purchasing department budgets for salaries, telephone, travel, telegraph,

supplies, and miscellaneous expenses.

(2) Determine what part of these expenses is for strictly purchasing activities (buying, expediting, value analysis.) Exclude costs of any jobs handled by your department which may not be handled by purchasing departments of other companies. These extra duties would include receiving, shipping, inventory control, traffic, and many others.

(3) After you determine your "pure" purchasing expense per year, divide this figure by the number of purchase orders issued annually. This gives you your cost-per-order. To determine your operating costs take your pure purchasing cost and divide it by your annual dollar volume of purchases. This will tell you how much it costs to spend a dollar. As noted before, the average operating cost for the P.A.'s taking part in this survey was 0.8¢.

If your costs prove to be much higher than average, it doesn't necessarily mean that you're less efficient than the average purchasing department. Nor does it necessarily mean that you're doing an exceptionally good job just because your costs are lower than average. It's easy to have low costs if you're understaffed. On the other hand, creative purchasing requires high-priced manpower. This naturally boosts operating costs but the extra expense is probably negligible when compared with the amount a skilled purchasing department can save through cost reduction.

In line with this, one of the more interesting findings of the survey is that half the respondents say they do not have a large enough budget to do a first-rate purchasing job. Among the dissatisfied P.A.'s were many with relatively high operating costs and above average cost-per-order ratings. One P.A., for example, reported that he spends an average of 2.2¢ for each \$1.00 of purchase volume and has a cost per order of \$25.20. Does his higher than average cost mean that his department is overstaffed and inefficient? Not necessarily. His costs could be high and he could still be understaffed for a number of reasons:

-It costs small companies more to spend \$1.00 on purchases. A very small company requires the same types of materials, supplies and services as a larger company in the same industry. As a result, it issues almost as many orders as the larger firm. This means it has almost as much purchasing paperwork as the larger company even though the average value of its orders is much lower. A company with a \$1 million purchasing volume might issue about 6,000 orders per year while a company with a \$10 million volume might issue 10,000 orders. The smaller firm has a purchase dollar volume that is only 10% of the larger company's, yet it supports a clerical workload that is 60% as great. Even though it may save a little on salaries, the cost of spending \$1.00 is inevitably much higher for the small company.

-Cost per order rises when purchase order volume goes down. This is another reason a purchasing department may have higher than average costs and still not be inefficient. Take the case of a company that issued 10,000 purchase orders per year and had an annual budget of \$80,000. Its cost per order would have been \$8.00 (\$80,000/10,000 orders per year). Suppose it changed its purchasing procedures, grouped more of its orders, or used blanket orders for repeat purchases. Because of these changes the number of orders issued might drop from 10,000 to 5000. This 50% reduction in the number of purchase orders issued naturally wouldn't cut the department's expense anywhere near that much. There would be some saving on paperwork but most other expenses (for example, buyers and purchasing agents' salaries) would go on as before. Expenses might drop to \$75,000 and, as a result, cost per order would actually rise from the old \$8.00 figure to



\$15.00 (\$75,000/5000 purchase orders per year).

This means that even though the department is operating more efficiently than before, its cost of issuing an order has risen.

—Costs vary in different industries. This is one more reason why a purchasing department's costs may be higher than average even though the department is doing a good job. Some industries have inherently high purchasing costs; others have inherently low costs. Both cost per order and the cost of spending \$1.00 on purchases are highest in industries like electronics and aircraft where a company may buy tens of thousands of high precision parts. No single item generates much dollar volume but each requires lots of purchasing time because of quality and delivery problems.

For the most part, however, variations in purchasing costs in different industries are not particularly important (see tables pgs. 72, 73). For example, the food, textiles and tobacco industries have the lowest cost for spending \$1.00, the average coming to little more than half a cent (0.63ϕ) . On the other hand, they had the highest average cost for issuing an order: \$6.92. At the other end of the scale, organizations selling services (rail-

roads, government, hospitals, schools, etc.) had the highest average cost of spending \$1.00—1.18¢ and the lowest cost per order: \$4.44. The narrow spread between purchasing costs in these industries is trival when you consider the wide differences in purchasing problems. Food, tobacco, and textile industries all spend a large percentage of their sales dollar on relatively few raw materials. Each purchase order for raw material gets a great deal of attention (thereby raising cost per order) but each order also accounts for a substantial amount of money (thereby reducing cost of spending \$1.00).

Service industries, on the other hand, buy no productive raw materials. Their purchasing agents devote all their time to buying supplies. As a result they issue a great many low-value orders. They don't spend much time on each order so cost per order is relatively low, but the cost of spending \$1.00 is high since it takes so many more orders (and paperwork) to generate a given dollar volume of purchases.

As the tables show, differences within industries are much more important than differences between industries. For example, the food, tobacco, and textile group and the services group include companies which spend less than \$2.00 to issue an order, they also include companies that spend more than \$10.

It might seem that the larger companies in a particular industry would have lower costs per order than the smaller companies in the same industry. Theoretically, the larger companies can make greater use of mechanization and can divide

This is the first of a series of three articles on measuring administrative efficiency in the purchasing department. The second article in the series, to be published in the Sept. 11th issue, describes how a medium-sized company used time study techniques to measure the cost of its purchasing cycle. The third, to be published in the Sept. 25th issues, describes how you can use work sampling techniques to measure efficiency and improve performance.

Metal Products (Including Instruments, and Transportation Equipment)

	COST PER ORD	ER	Tunical Common
Volume of Purchases Less than \$5 million	High \$9.60	Low \$2.40	Typical Company (Mode) \$4.60
\$5 to \$20 million	\$7.00	\$2.80	\$4.40
Over \$20 million	\$10.20	\$2.50	\$6.80
	COST TO SPEND	\$1.00	
Less than \$5 million	\$0.0240	\$0.0022	\$0.0080
\$5 to \$20 million	\$0.0140	\$0.0040	\$0.0070
Over \$20 million	\$0.0115	\$0.0028	\$0.0040

Average Cost per Order for Industry: \$5.04 Average Cost to Spend \$1.00: \$0.0084

Primary Metals, Mining, and Construction

COCT DED ODD	FD	
High \$10.00	Low \$4.20	Typical Company (Mode) \$7.20
\$9.10	\$1.80	\$5.70
\$12.60	\$3.60	\$5.40
COST TO SPEND	\$1.00	
\$0.0140	\$0.0022	\$0.0080
\$0.0245	\$0.0022	\$0.0050
\$0.0180	\$0.0025	\$0.0035
	#ligh \$10.00 \$9.10 \$12.60 COST TO SPEND \$0.0140 \$0.0245	\$10.00 \$4.20 \$9.10 \$1.80 \$12.60 \$3.60 COST TO SPEND \$1.00 \$0.0140 \$0.0022 \$0.0245 \$0.0022

Average Cost per Order for Industry: \$5.41 Average Cost to Spend \$1.00: \$0.007

Institutions and Governments

	COST PER ORD	ER	
Volume of Purchases Less than \$5 million	High \$9.70	Low \$1.20	Typical Company (Mode) \$4.00
\$5 to \$20 million	\$14.00	\$2.50	\$5.50
Over \$20 million	\$10.50	\$3.20	\$4.50
	COST TO SPEND	\$1.00	
Less than \$5 million	\$0.0280	\$0.0030	\$0.0150
\$5 to \$20 million	\$0.0250	\$0.0016	\$0.0070
Over \$20 million	\$0.0120	\$0.0024	\$0.0050

Average Cost per Order for Industry: \$4.44 Average Cost to Spend \$1.00: \$0.0118

work among purchasing personnel more efficiently. But as the tables show, this isn't necessarily true. Some large companies have a high cost per order; others are on the low side. The same pattern (or lack of pattern) holds for smaller companies. Apparently, cost per order depends more on individual ordering procedures and basic policies than on size. Purchasing departments that group purchases, use blanket orders, and have well-paid

people working on cost reduction inevitably have higher order costs than departments that simply fill each requisition they receive.

There is a relationship, however, between the size of the company and its cost of spending \$1.00. In general, the bigger companies operate their purchasing departments more efficiently in relation to their purchasing dollar volume. For example, the table shows that it might cost a primary metal

Run a Purchasing Department?

Food, Textiles, and Tobacco

	COST PER ORD	ER	
Volume of Purchases Less than \$5 million	High \$12.70	Low \$4.60	Typical Company (Mode) \$6.30
\$5 to \$20 million	\$12.20	\$3.50	\$4.95
Over \$20 million	\$6.20	\$1.80	\$5.90
	COST TO SPEND	\$1.00	
Less than \$5 million	\$0.0160	\$0.0055	\$0.0095
\$5 to \$20 million	\$0.0090	\$0.0022	\$0.0040
Over \$20 million	\$0.0042	\$0.0015	\$0.0020

Average Cost per Order for Industry: \$6.92 Average Cost to Spend \$1.00: \$0.0063

Chemicals, Petroleum, and Paper

	COST PER ORD	ER	
Volume of Purchases Less than \$5 million	High \$10.00	Low \$1.95	Typical Company (Mode) \$3.90
\$5 to \$20 million	\$13.00	\$2.05	\$5.50
Over \$20 million	\$12.80	\$4.80	\$7.60
	COST TO SPEND	\$1.00	
Less than \$5 million	\$0.0240	\$0.0038	\$0.0080
\$5 to \$20 million	\$0.0120	\$0.0020	\$0.0060
Over \$20 million	\$0.0084	\$0.0030	\$0.0056

Average Cost per Order for Industry: \$5.70 Average Cost to Spend \$1.00: \$0.0074

Non-Metallic Products (Wood, Rubber, Stone, Clay, etc.)

	COST PER ORD	ER	
Volume of Purchases Less than \$5 million	High \$13.80	Low \$2.25	Typical Company (Mode) \$4.95
\$5 to \$20 million	\$10.75	\$2.40	\$4.20
Over \$20 million	\$8.20	\$3.30	\$6.70
	COST TO SPEND	\$1.00	
Less than \$5 million	\$0.0180	\$0.0035	\$0.0090
\$5 to \$20 million	\$0.0155	\$0.0022	\$0.0075
Over \$20 million	\$0.0095	\$0.0024	\$0.0046

Average Cost per Order for Industry: \$5.56 Average Cost to Spend \$1.00: \$0.0082

producer or mining company about 0.4e to spend \$1.00 if its volume of purchases were \$20 million, but it might cost 0.8e if volume were \$2 million.

It doesn't take an IBM computer to find out that a purchasing department with a \$14 million purchasing volume and which spends 1.4¢ for each \$1.00 of purchases, has more people making higher salaries than a department with a \$16 million purchasing volume which spends only 0.4¢ for

each \$1.00 of purchase volume.

Chances are the higher cost purchasing department is making the greater contribution to company profit. But there's no denying that management is impressed with low operating costs. Only by having a sound understanding of its operating costs and of how much it saves the company through cost reduction can a high-cost purchasing department substantiate its case.

THE BIG ROLE OF THE

One-Man Purchasing Department

M ANY SMALL companies rely on the purchasing department to keep production going practically on a day-to-day basis. They need many different items, but they can't afford to stock much of any one. The combination of diversified needs and minimum inventories means that purchasing has to place orders without delay and must make sure that goods are shipped promptly.

That's why Bill Matthews' oneman-and-a-girl department clears out all requisitions daily. "We must keep moving," he says. "Our inventories are small, and in our type of business we need every-

thing immediately."

Matthews is P.A. for the Pannier Corp., Pittsburgh, Pa., a small but well-known manufacturer of marking devices. It makes rubber printing plates and stamps, printers, and tag embossing machines. Raw material requirements run heavily in the rubber, plastics, and metals strip lines. In addition to these, purchasing buys a wide variety of castings and mechanical parts.

To keep materials moving and handle 100 or so orders a week comfortably, Matthews uses a straightforward buying system that avoids frills, yet covers all the bases. He does the buying, expediting, and invoice checking. His secretary takes care of order typing, distribution, and filing.

Matthews works closely with production through the shop foremen who write all requisitions. He has found two ways to

simplify their task: standardized descriptions, and traveling requisitions.

"At one time," he explains, "foremen didn't get a copy of the purchase order, so they had nothing to go on when they had to write a requisition. Descriptions varied and frequently the specifications were not clear. When Matthews began sending foremen copies of purchase orders he ended most of this uncertainty. A requisitioner who has a previous order to refer to when re-ordering is soon using standard terminology and talking in the language of the trade.

Recently purchasing started to put certain items on traveling requisitions. So far t.r.'s cover only metal strip used in the stampings department, but Matthews expects to cover all stock items before long. By gradually changing over now, he is anticipating the plants move to larger quarters. There, stock will be centralized, instead of divided among the using departments, and the permanent type of requisition will be especially useful.

Cards Last Five Years

Matthews has tried to get as much data on a 5"x8" traveling requisition card as is reasonable without crowding. There is space to list 30 purchase orders, 15 on each side, which gives the cards an average life of five years. Instead of providing a predetermined number of lines for descriptions and boxes labeled "size", "part number", "drawing number", etc., Matthews has made the form more flexible by leaving a large blank space for descriptions and specifications. A similar space on the reverse side of the card has room for up to six supplier names and addresses.

Pannier's purchase order system is equally efficient. A standard purchase order set has six parts: original and acknowledgment copy for the vendor, a copy for the requisitioner, and one for receiving. Purchasing keeps two copies: one for the order file (by vendor), and a follow-up copy.

Matthews makes each copy work. In fact, one of the reasons he added the foremen's copy some time ago was to answer the com-



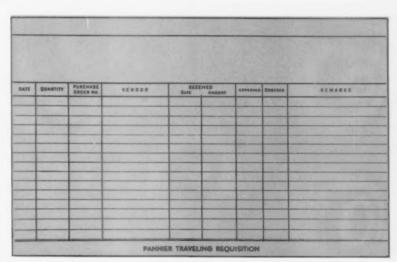
	To_		Date	
If Order Will Be Delayed, Give Reason When Will You Ship Pertial via Complete via Did You Ship As Requested Signed by	WE HAVE NOT RECI	EIVED SHIPME	NT	
When Will You Ship Partial via	Of Order		Dated	
Complete via Did You Ship As Requested Signed by	If Order Will Be Delay	ed, Give Reason	1	
Did You Ship As Requested Signed by	When Will You Ship	Portial_	via	
Signed by		Complete	via	
	Did You Ship As Requ	iested		
		Signed by		
				115
	THESE			
	THESIDE			

For orders not followed up by telephone, Matthews uses a double postcard to check delivery schedules.

mon question "Did you place my order?" as well as to make requisition writing easier.

Each follow-up copy is filed chronologically in a forward file which is checked one week after the order has been placed. Matthews secretary first finds out if the order has been acknowledged or delivered. Then, if delivery is unsatisfactory, she gives it to Matthews who checks the vendor.

When material comes in, the receiving department uses its copy of the purchase order as a receiving report and returns it with a packing list to purchasing. The secretary matches the receiving report and the packing list with the purchase order open file copy and holds them for the invoice. A few times a week Matthews checks and approves invoices for payment. Then the original invoice, receiving report, and packing list go to accounting. Purchasing closes its file with an invoice copy. For quick reference, Matthews' secretary keeps a numerical list of order numbers which she checks off when the order is complete. - END



Pannier P.A. William A. Matthews: He's made a science out of oneman purchasing.

Pannier's traveling requisition solves a space problem by simply leaving a blank strip across the top for descriptions and specifications. Vendors' names and addresses go in a similar spot on the reverse side.



United Machine & Tool Co., has found Polaroid photos a big help in making decisions on whether or not to buy used machinery for renovation and resale. Field men take photos of the machines and then forward the shots to purchasing. Here a member of United Machine's purchasing department studies a photo of a piece of machinery while talking on the phone to the owner about the machine's operating characteristics.

How Purchasing Uses Polaroid Pics

Purchasing has always used written communications effectively. Now it's also employing a visual tool—Polaroid photographs—to do a better buying job.

For several years Polaroid cameras have been used in purchasing departments to take photos of materials and parts that were damaged in transit or which had defects when they left the vendor. P.A.'s found that by sending a vendor a picture of a damaged or defective part it was much easier to work out reject problems.

But now, in addition to this fairly standard use of the Polaroid, a number of purchasing departments have come up with new and unusual ways to employ the camera which are illustrated on these pages. Natural y, the main reason a Polaroid has been used is its speed—you can get a print in 10 seconds.



At Lever Brothers 10-second photos are used by draftsmen to prepare blueprints for revisions to plant equipment and to guide purchasing in buying the materials and parts needed to make the revisions.

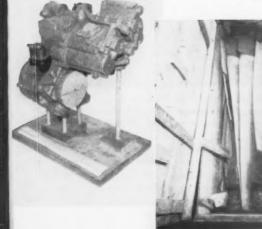


Photo on the far left is typical of the Polaroid pics which Hamilton Standard Corp.'s purchasing department sends to vendors. The item shown is a clay model of an engine for an aircraft air conditioning system. One metal part has been worked into the clay mock-up to show the supplier exactly how the part fits into the final assembly.

Hamilton Standard also uses the Polaroid as proof that goods were received in damaged condition. As the adjacent photo shows, rails protruding through the wooden packing crate punctured a section of the propellor mounting causing it to rust.

In a reverse twist, S&C Electric Co. photographs loaded cars before shipment and sends the print to its customer to prove that the shipment was blocked correctly.



Harold Taft, P.A. for the Taft Chinaware company, photographs merchandise as it is unpacked and mounts the prints in a special inventory book. He finds the book simplifies the job of reordering the many different patterns of chinaware and crystal that the company buys.



Casting department at I-T-E Circuit-Breaker Co. photographs defective castings (left) which are sent to purchasing for use in working out reject and charge-back negotiations.

The "1" and "2" markings on the print (below) indicate location of the defects.





				1	4/	1	11	1	7	1	1	17	1	1	1	17	1	1	1	1	1	1	1	7	1	1	1
			Sile	FERINTENDE	PURCHASI	S. S	STOREKEEPES	FOOR	MEMAN	CLERK		CLERK	SEMIODE	STENO	STENO		//				//	//	//	/	OTHER DEPT	CENTRA	MAL PURCH
			A	-	В	C		D	1	E	F	1	G	H	\Box	1	1	1	1			1	1	1		1	1
	Review purchase req. for details*	1		-	-	-	H		+	-		1		1	Н		+	+			Н	+		1		\top	+
ŀ	Distribute purchase reg. to buyers	2		+	+	+	1		+	+		1	1	+					1		\Box	+	+	1			+
S	Pull travel, regs. to match stock status rep. for buyer	3		1		\vdash	\Box		+		Н						1					1					T
REQUISITIONS	Review travel, regs.	4		1					+		\Box						1										T
E	Prepare new or revised travel, regs.	5		1			\vdash	-	+				1				+	1	1			1		1			+
ã. h	Screen purchase regs, against surplus	6		+	+	-	1		+	-							1	1	1			1					+
E E	Establish order quantity on travel, req.	7			+	1		+	+	1							1	1			\Box	1	1				+
-		8		-	-	+	1		+	+			+	+			+	+			\Box	+	+	+			+
1		9	Н		+	+		-	+	+	Н	1	+	+	Н	\forall	+		+			+	+	+			+
	Selection of vendors	10	-		+	-			+	+				+			+	+			\Box	+	+			-	+
AND QUOTATIONS	Typing of req. inquiries	11				1			+								+					1					1
Ĕ	Dispatching blanket inquiries (boxes & food)	12	-																					T			T
6	Filing of open inquiries	13															1										
18	Matching quotes with open inquiries	14				1			1		\Box																1
9		15		\Box			\vdash		+			\Box					1										1
Z		16	-						1								1	1									T
	Process regs. for typing of P.O. & intr. plt. regs.	17			\top	T			\neg								1							T			
- 1	Dist. of P.O. and purchase regs.	18	-						1																		
	Schedule arrival of mtl.	19	+	П					1																		
	Expediting - first step	20	-					\Box	1								1										
	Expediting — second step	21							1																		
	Negotiation contracts	22	-						1		1		\rightarrow		1		1	1	T					1			
	Type P.O.	23	-						1								1	1	T								7
RS	File P.O. & intr. plt. reqs.	24				1			1																		
PURCHASE ORDERS	Closing out open P.O. against rec. tally	25										\Box											1				
9	Handwriting blanket order releases	26						\Box												1					1		
ASE	Type intr. plt. reqs.	27	1							1							1	1	†				1			\Box	
CHI	Interview salesmen and arrange meetings	28	-		1					1	1				1			1		1			1				
UR.	Determination of vendor's qualifications	29																	1				1				
-	Review vendors' ack.	30	-																							\Box	
	Maintain order register	31	1															1	1	1							
	Performance complaints with vendors	32	-					\vdash		1		\Box			-			1	+	1			1			\Box	
		33	-				1			\top								1		†		П					
		34						\Box												\top			\top			\Box	
	Direct supv. rec. & storage	35				T				1	T			T	1									1			
	Review overshipments & sub.	36	-		1					1	1		1	1	1			1	1	1			1	1	1	\Box	
GE	Process collect frt. bills and rec. tallys	37	-		1	1				1			1	1	1				1	1				1			
RECEIVING AND STORAGE	Note all claims for traffic	38	-			1								1	1			1	1						1		
STC	Planning storage arrange.	39	1		+	+	-			+	+		1	1	1			1	+	-			+	1	1	\Box	
NO NO	Super of mtl. tagged for W.O. & Est.	40	+		+	+	-			+	-		1	1	1		1	1	+	1	1		1	1	1		1
A		41	+		-	+	1	1		+	+		1	-	+		1	+	+	+	1		1	+	+	\Box	
		42	-		-	+	+	+	-	-	+	-	-	+	+		-	-	+	+	-	-	-	-	+	1	-

Checkup on Plant Purchasing

A UNIQUE procedural chart is helping Celanese Corporation's headquarters purchasing group keep track of operations in 28 plant purchasing departments.

Each plant purchasing superintendent periodically completes the 18" x 36" chart, using a simple set of symbols (see illustration, which shows form in two sections.) Then it goes back to Celanese headquarters at Charlotte, N.C., for review by Director of Purchases Henry Michel and Assistant Director Frank C. Campbell, Jr.

The charts make it easy for Michel or Campbell to compare titles, responsibilities, and workloads of purchasing personnel at different plants. In discussions during regular visits to the plants they can determine whether the differences are based on local conditions or whether they can be eliminated to make practice more uniform throughout the company.

Campbell, who designed the form, points out that it's not meant to force standardization on the plant purchasing superintendents. "It helps both them and us," he says. "It gives the superintendent a chance to regularly and systematically review what his people are doing. And it enables us to check the whole purchasing organization, and pass ideas on personnel utilization from one plant to another.

				NTENDE	1	ISING AC	STOREMEN	CEPER	FOREMAN	//	CLERK	CIEC	X	PSTENO	//	ENO	/	/	//	//	//	/	/	11	8000	SCHIS	IL PUID
			100	OPERINTENDE	-	1		1	108	1	73/	10	1	SENIOR STENIO	1	5//	1	1	/	//	1	1	/	1	OTHER DES	CENTO	NA IN
			A		В	(D		E	1	F	G		Н												
	Direct super, of issuing, delivery & misc. out shipping	43																									
2	Arrange assist, from other depts, for proc. & handling	44																									
ž	Offer subs, on stock auts	45																									
	Check engineerg, for reserved mtl. — closed W.O. & Est.	46								1		1	1		1		1										_
AND SHIPPING	Plan packing of misc. outbound ship.	47	-		\vdash	-					1	+			1	+	+	+	1	1	+	+	1	1	1	\Box	-
2	Prepare shipping notices for outbound stores items	48	-		\vdash	-	+	+		-	+	+	+	-	-	+	+	++	+	+	+	+	-	-	+	-	-
č	Traper ampling named to address the same and a same and a same and a same a same a same a same a same a same a	+	-		+	+	+	+		-	+	+	+	-	+	+	+	+	-	-	-	+-	-	-	+-	-	-
1		49	-	-	\vdash	+	-	-	-	-	+	+	+	-	-	-	+	\vdash	-	+	+	-	-	1	+	\rightarrow	
4		50	$\overline{}$		\vdash	-	+	-			-	-				-	_	\vdash				_					_
1	Screen stock auth, cards for SCC	51						1			1											-					
1	Serve on Stock Control Committee	52																									
	Prepare listings of items for review by engineers	53																									
	Maintain temp. stock no. register	54																				1	1				_
	Check IBM Dr and Cr cards for accuracy active stores	55	-			1	1	1				1	+	1	1	1	+			1	-	+	1		+		_
	Hunt down and report errors on IBM	56	-		1	+	+	+	-	-	+	+	+	-	+	+	+	+	-	-	-	+	+	-	+	-	-
ı	Supervising physical inventories	-	+-		H	+	-	+	-	-	+	+	-	-	+	-	+		-	-	-	+	+	-	-	-	
		57	-	-	1	-	-	-	-	-	+	-	-		-	-	+	-	-	-	-	+	-	-	-	-	
5	Reconciling physical & IBM inventories - surplus and active	58	-		П	1	-	-		-	-		-			-	1					-					
The state of the s	Prepare SE&M declaration papers for stores surplus	,59																									
	Process SE&M reports from other depts.	60																									
1	Review condition of newly declared surplus	61						1																			
	Surplus determination	62						1				1	1		1	1	1	1								1	
	Surplus segregation & storage	-	+		1	+	-	-		-	1	1	-	-	+	+	+	-		-	+	+	-	-	-	-	-
		63	+-	-	-	-	+	+	-	-	+	+	-	-	1	+	+	+	-	-	-	-	-	-	-	-	
	Maintain SE&M number register	64	+				-	-					-				1				1						
j	Super tagging of SE&M items	65																									
ı	Replying to other locations inquiries re surplus	66															T										
1	Process IBM Dr & Cr cards — surplus	67						T								1	T				T	T					
۱	Surplus disposal & scrap sales	68	-												1	1	1	1		1	+	1					
ı	Super scrap yard	69	+		1	+	1	1	1	1	+		-		1	-	+	-		-	1	+	-	1		1	
	Employees surplus & scrap sales	-	-		1	+	-	+	-	-	+	+	+	-	+	+	+	+		+	-	+	+	-	+	-	_
ı	rusholzes anchua e acceb seies	70	-	-	1	-	+	+	-	-	-	-	-		-	-	+	-		-	-	-		-	-	-	
ı		71	-																								
		72																									
1	Maintain catalog & vendor file	73															T										
RECORDS	Maintain commodity code	74			П																						
	Maintain vendors code ,	75			\Box		1	1				1			1		+			1	-		1		-	1	
8	Maintain stores catalog	76			1	-	+	+	-	-	+	+	+	1	-	-	+	+		+	+	-	-	-	+	+-+	-
		77		-	\vdash	+	+	+	+	-	+	+	+	\vdash	+	+	+	+		+	+	+	+-	-	-	-	-
AND	Compile statistics for reports	78	-	-	\vdash	-	+	+	-	-	+	+	+	-	-	+	+	-	-	-	-	-	+	-	-	-	_
		-	-	-	-	+	+	+	-	+	+	+	+		-	+	+	-	-	-	-	-	-	-	-	-	_
2	Prepare surplus status report for acctg.	79	+	-		-	_	-			-		-			-				1							
STATISTICS	Prepare and maintain surplus listings	80														1											
•	Maintain dept. time records	81																									
n		82	1					1																			
		83				+	+	1					1	1	\rightarrow	+	+			+	+	1	+-	-	-	1	-
7	Typing correspondence	84	-		1	-	+	_		-	-	+	+	-	-	+	+		-	-	+	+	-	-	-	-	-
1	Files — correspondence and general	85	-	-	1	+	+	+	-	+	+	+	+	-	+	+	+	++	-	+	-	+-	-	-	-	\rightarrow	_
ı		-	-		\vdash	-	+	+	1	-	-	-	-		-	+	-	-	-	-	-	+	\perp		_		
1	Files tickler	86	4		1	-	-	-			-	-	-		1	-	-				-	1					
1	Files suspense	87	_																								
1	Maintain letter register	88																									
	Maintain office supply stock	89																		1							
	Prepare debit memos for items sold	90					1	1							1		1										
1		91				1	1	1		1	1	1	1	1	1	-	1			1	1		1	1	-	1	
		92	-		1	+	+	+	-	-	+	+	-	-	-	+	+	+	-	-	+	+	+	-	-	-	-
+	Supervision of staff	1	-		-	+	+	+	-		-	+	-		-	+	+	-	-		-	+	-		-	-	_
1		93	-		1	-	-	-	-		-	1	-				1		1	-	1	1					
J	Supervision of hourly personnel	94	-																		1						
2	Personnel problems: - hourly	95																									
	Training hourly employees	96																									
	Planning hourly employees work assignments	97															T										
1	Personnel appraisals	98	1				1	1			1	-	1		1	1	1			1	+	1	1		-	1	
NOW IN STRAIN	Safety program	99	-		+	+	+	1	-	-	+	+	+	-	-	-	-	-	-	-	+	+	-	-	-	-	-
ě	secrit bradient	-	-		-	-	+	-	-	-	+	+	+	-	-	-	-	-	-		-	-	-	-			
		100			1	-	-	-	-	-	1		-			1	-				-	-					
-		101																									
-	Direct supervision of engine crew	102																									
	Prepare outbound RR car reports	103					1	T				T	T				T					T					
		104			1	1		1	1			1			1	-	+			1	-	1	1	1	-		-
O CHANGE		-	-		+	+	+	-	-	-	+	+	-	1	+	+	+	-	-	+	-	+	-	-	+	-	-
2		105	-		1	+	+	+	-	-	+	+	-	-	-	+	+	-	-	-	-	+	+	-	+	-	_
	2-14-1	106	-		1	+	+	+	-	-	-	+	-		-	-	+	-		-	-	+	-	-	-	-	
ı	Opening & dist. mail	107						-					-				1										
	Cost reduction projects investigation	108																									
1	Maintain register & files Acct. W.O. & Est.	109						T		T	T	T	T				T			1							
	Answer telephone queries re stores inventory & prices	110	-			1		T				1								1	1	1	1			1	
	Control imprest fund	+	-	-	H	-	-	-	1	-	+	+	-		1	1	+	-	-	+	-	+	+	1	-	+	-
۱		111	-	-	H	-	-	+	-	-	-	+	+		-	-	-			-	-	-	-				
	Pattern control & maint.	112		-	H		-	-	-		-	1	-				1										
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41		114	1	1				1							T						-	-	-				
U		114		-		_	_	-		1			-														













DONE IN CONJUNCTION WITH OR ASSISTS.

Mechanization Leads to Materials Management

Thanks to a mechanized inventory control system, purchasing and stores at the Bettis Laboratory are now united under single management. The new materials system has cut costs, increased efficiency.

By O. F. Kraft, Manager Inventory Materials, Bettis Atomic Power Laboratory, Westinghouse Electric Corp., Pittsburgh, Pa.

A MECHANIZED purchasing and inventory control system is saving more than \$100,000 a year at the Bettis Atomic Power Laboratory, Pittsburgh, Pa. In addition to cutting both operating and material costs, the new system also makes possible:

• Better inventory control by management:

• Streamlined materials organization;

 Better service to using departments. agement concept. The change has produced greater efficiency and improved communications.

The mechanized system is an extension of machine ledger-keeping that was introduced in the

laboratory in 1955. Initially it was programmed and operated on conventional tabulating equipment. But now it uses a small scale computer with random access

(Please turn to page 82)

Since mechanization of the inventory activity at Bettis (operated by Westinghouse for the A.E.C.), the stores and purchasing functions have been merged into a single group called the inventory materials department. This unified responsibility under one management gives better control over inventory and exploits mechanization to the fullest. The idea is now developing into an application of the materials man-

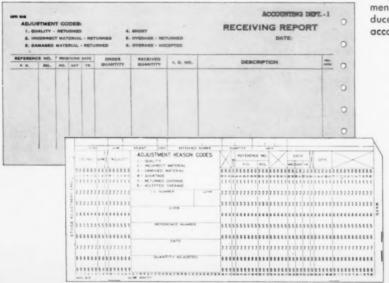


Author Kraft (r.) and data processing supervisor W. J. Walter watch as W. L. Allison adjusts inquiry station controls to read out order and inventory status data. Kraft is responsible for both stores control and inventory buying at Bettis.



Whenever an item hits order point, computer system punches stores requisition card. After inventory controller determines required quantity, machine prints stores order release. As most inventory items are on annual open orders, releases take the place of purchase orders. For items not on open orders, requisition cards are used to prepare conventional p.o.

When material is delivered, receiving department completes receiving card, and, in case of discrepancies, adjustment card. The two are used to produce a receiving report that authorizes accounting to pay vendor's invoice.





I.	UNIT PRICE	FIRM PRICE PERIOD IN MONTHS	I.D. NUMBER	, CA	ARD EDPS A	RIPTION		ESTIMATED YEARLY USAGE	CO'E TURNET
	CASH	Γ	7	5.	TRANSPORTAT TERMS	ION - PREPAI	D-FREIGHT ALL	OWED (ONLY	')
2.	TERMS	SEE INSTRU		6.	MONTHLY PAYMENT - DATE	MARK CHE BLOCK ONLY	51F 2016	-	15TH 301H
3.	DELIVERY	QUOTE O		7.	METHOD OF DELIVERY	MARK ONE OR MORE BLOCKS	VENDOR'S TRUCK (I)	-	CIAL TRUCK (3)
		FULL W	EEKS	-	VENDOR'S DESCR	IPTION AND/OR R	EMARKS		
4.	F.O.B. POINT -		ENNSYLVANIA	8.					
	1.D. NUMBER U/M VENDOR 2 3 4 5 6 7 8 9 10 11 10		8 2 3 3 5 7 7 7 6 9 9	32 33 34 3	DESCRIPTION 36 37 38 39 40 41 42 43 44 45 4	E 47 48 49 50 51 52 53 54	UNIT PRI	CE 65 66 57 68 64 70 71 72 1	Y'RLY USAGE

Bid card does double duty as inquiry and quotation. Vendor enters quotes for items directly on cards which then go back to Bettis data processing for tabulation and evaluation.



Vendor performance report is typical of six reports prepared regularly by computer to help Bettis buyers. It shows number of late deliveries, rejections, shortages, and overages.

memory. Under this system, all inventory work is operationally integrated.

One of the distinct characteristics of the system is the streamlined method of inventory control. In developing the system emphasis was on maximum use of the machines to process the detail work then performed manually. Originally no attempt was made to superimpose the ma-

chines upon existing systems designed for effective manual operations. However, the machines have opened up completely new and different ways of performing daily inventory control operations and, in many instances, are making the manual methods obsolete.

Here are some of the changes in philosophy and operations that contribute to improved inventory control:

- (1) Signed individual requisitions are eliminated; in their place IBM cards are used as requisitions.
- (2) Vendors are not permitted to make partial shipments. In fact, a "No Partial Shipments" clause is made a part of each open order. If a partial shipment is made, the "Stores Release" is considered complete and closed-out. If a

(Please turn to page 180)

Requisition Serves As Order Release

By Philip Richardson Hill Material Supervisor Magnetic Research Corp.

A SWITCH to an open (blanket) order system is saving us an amount equal to almost 1% of our material costs. By putting almost a third of our 7500 orders on an "open" basis we have cut paperwork substantially and made ourselves important to a few vendors rather than a nobody to many vendors.

Only one purchase order is written during the period covered by the order (usually a year). Our redesigned requisition form, closely modeled after the p.o., is used as a release against the or-

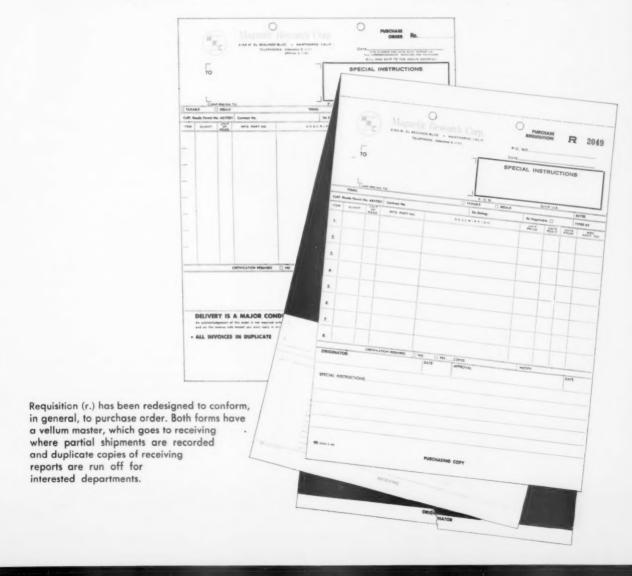
der. Requisitioners fill in amount, part numbers, and descriptions of items needed.

The requisition has four parts, including a vellum master like the one used in the purchase order. Requisitions used in the system are numbered with the number assigned to the original open order.

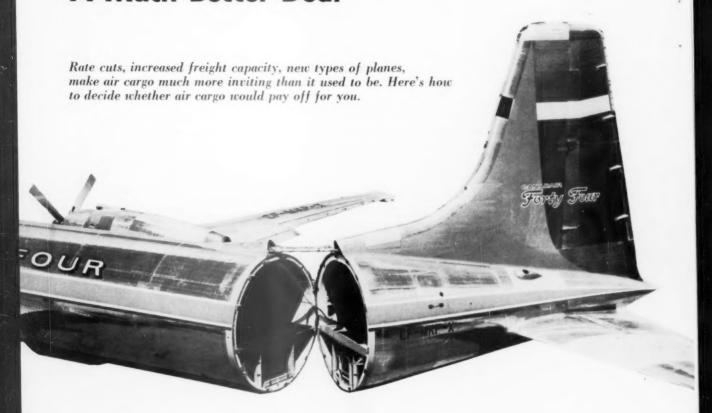
The first copy goes to inventory control then to purchasing. The fourth copy also goes to purchasing, then back to the originator. No additional typing is necessary, since all releases are telephoned directly to vendors. The vendor does not receive any form except a copy of the original order. The third copy stays with the requisitioner.

The vellum master (second copy) goes to receiving where it is used to duplicate receiving information for interested departments.

More than one-third of our annual total of 7500 orders are now open orders and we hope to increase this number during the current year. We make special efforts to select only the highest type of vendor when placing orders, with the result that we have had problems-and only minor ones at that-with only two open orders out of 2,500. We have been able to establish better relations with fewer suppliers, so that today, when a hot job hits us we have very little trouble getting extra fast delivery.



Changes in Air Cargo Make It A Much Better Deal



Because of its low operating cost, the hinged tail CL-44D, manufactured by Canadair Limited, is expected to push air freight tonnage up while lowering air freight rates. The new plane has a maximum payload of 65,000 pounds, a range of over 3,000 miles, and a maximum speed of 395 miles per hour.

By Thomas F. Dillon,

AIR FREIGHT rates are getting lower, and there is good reason to believe they will continue to drop. If you have ever considered using air freight service and decided against it because the rates were too high, it might pay you to take a second look now. Three developments have made air freight a good transportation buy for P.A.'s: introduction of new cargo aircraft, the expansion of air cargo capacity of conventional aircraft, and use of giant jets in passenger service.

In June, The Flying Tiger Line and Seaboard World Airlines started testing a unique aircraft which promises dramatic developments in the future of air cargo transportation. Built by Canadair, Ltd., the \$5.5 million jet-prop CL-44D, is the first airplane to be manufactured as an all-cargo commercial air freighter.

The new plane features a hinged tail, which permits the entire tail section to swing aside for end loading of cargo. Ground loading and unloading time will be cut to minutes from the hours required to side-load other aircraft.

The CL-44D's huge capacity (it can carry a maximum payload

of 65,000 pounds versus 35,000 pounds for conventional models), has already affected the rate structure of the North Atlantic air cargo carriers. Anticipated use of the CL-44D in North Atlantic service has placed emphasis on volume shipments. To encourage such shipments, carriers have announced reductions ranging up to 65% of former rates. The new rates will become effective on September 1st. The change is expected to boost North Atlantic air cargo volume 50%.

New Use for Old Planes

Domestically, air cargo capacity began to expand when turbine jet and pure jet planes replaced propeller-driven aircraft on passenger runs. The non-jets, "old before their time", are being converted to cargo type aircraft. Seats are being pulled out, windows are being barred up, and floors are being reinforced.

Even more cargo capacity is available in the new jets themselves. These larger planes can carry more cargo than the piston-driven planes they replace. The DC-8 jet, with a full passenger load, can haul as much cargo on a transcontinential flight as a DC-4. And the greater speed of jets of course means more trips per week.

Rates Are Going Down

Lower domestic rates are beginning to reflect the airlines' desire to fill their additional cargo space. One airline published three reductions in its air freight rates within four months.

Airlines are working hard to make air cargo more attractive in other ways too:

—Cargo facilities have been expanded and improved.

—Scheduled freight service either direct or in cooperation with motor carriers is now provided to 5,000 domestic points and 160 cities in foreign countries.

—The advantages of containerization are now being offered the air shipper.

—An electronic cargo reservations system, similar to that used for passenger service, will soon be put into operation.

-To reduce paperwork, airlines



With seats pulled out and cargo handling equipment built in, converted passenger planes, such as this Eastern Air Lines' "Flying Freighter" are making more air cargo space available to the nation's shippers.

Does It Pay to Go Air Freight?



AIR FREIGHT

ITEM/ORIGIN/DESTINATION

EVALUATION FORM	CITIES OR ITEMS
1. SAVINGS IN INVENTORY COSTS Days of Inventory Saved 1. Transportation Pipelines 2. Plant Warehouses 3. Branch Warehouses 4. Total (1+2+3) Annual Inventory Carrying Charge 5. Cost of capital (Return on investment) 6. Obsolescence 7. Insurance 8. Taxes 9. Total (5+6+7+8) 10. Annual costs value of products eliminated from warehouses 1. ANNUAL SAVINGS IN INVENTORY COSTS (4×9×10) 365 days)	\$\frac{5}{5}\$ \$\
2. SAVINGS IN WAREHOUSING COSTS 12. Rent (or Cost of Capital) 13. Labor 14. Overhead (heat, light, etc.) 15. ANNUAL SAVINGS IN WAREHOUSING COSTS (12+13+14)	
3. ANNUAL GROSS SAVINGS 16. Annual Savings in Inventory Costs (from line 11) 17. Annual Savings in Warehousing Costs (from line 15) 18. ANNUAL GROSS SAVINGS (16+7)	
4. ADDED TRANSPORTATION COSTS 19. Annual weight of products eliminated from warehouses 20. Shipping Charges via Air Freight (airport-to-airport) 21. Pickup and Delivery Charges 22. Excess Valuation Charges 23. Subtotal (20-21-92) 24. Packaging Savings 25. Total Cost of Door-to-Door Air Delivery on Items Eliminated from Warehouses (23-24) 26. Actual Cost of Door-to-Door Surface Delivery on Same Items 27. ANNUAL ADDED TRANSPORTATION COSTS (25-26)	
5. TOTAL ANNUAL NET SAVINGS 28. Annual Gross Savings (from line 18) 29. Annual Added Transportation Costs (from line 27) 30. TOTAL ANNUAL NET SAVINGS FROM AIR FREIGHT (28—29)	

Freight rates are only part of the cost of distribution. To get the whole picture you have to consider inventory and warehousing costs as well. This chart prepared by United Air Lines is designed to help you decide whether it would pay to ship by air.

are investigating use of "single shipping document through rate service" in connection with motor carriers.

Annual air freight ton miles have increased 45 times since 1946, the first full year of air freight operations, but industry leaders say the growth so far is insignificant when compared with the potential that exists. They point to the fact that air freight still accounts for only one-half of one percent of the total intercity ton miles of freight moved by all forms of transportation in the

United States.

Until now, two big obstacles to the growth of air freight have been limited cargo carrying capacity and high freight rates. Now cargo capacity is ample but freight rates, though getting lower, are still high. At present, they average 22 cents per ton mile, while surface transportation rates average from three cents to 11 cents per ton mile.

Yet the airlines contend that freight rates are only part of the distribution cost. The P.A. who does not consider "total distribution costs," they say, is fooling himself.

S. G. Tipton, president of the Air Transport Association of America, says the initial higher expense of air freight is often justified, when all elements of distribution are considered. Tipton cites some examples:

—A motorcycle manufacturer ships his vehicles by air freight completely assembled and factory-adjusted. His packing consists of wire strapping the motorcycle to a dolly. Even though air freight rates are higher than surface rates, the manufacturer figures he saves \$7.50 per machine by not having to reasemble and adjust the machine at destination

adjust the machine at destination.

—Boeing Airplane Company makes airplane engines on the East Coast and ships them to the West Coast for assembly to the air frame. Previously the engines were packed in heavy metal containers. When they go by air freight the engines are packed in zippered plastic bags and bolted to shipping stands. Boeing estimates it has saved \$750,000 in shipping costs on the first 100 aircraft shipped in bags.

One Warehouse Serves All

-Raytheon Corporation has combined air freight with an automatic data processing system and is now able to serve its distributors throughout the country from one warehouse in Westwood. Massachusetts. Raytheon closed branch warehouses at Atlanta, Chicago, Los Angeles, Kansas City, and Memphis and three regional centers. Savings made by eliminating duplicate inventories have already hit \$2 million. Delivery time to customers is down from an average of seven days to one day.

What should a P.A. know about air cargo in order to take advantage of it? First, he should know something about the different types of service available. He should also know just how much air cargo service costs. Finally, he should not automatically write off air cargo as "too expensive" without taking a good look at it.

There are four types of air cargo service to choose from: air parcel post, air express, air freight, and air freight forwarder service.

More Space Now Available

Air mail and air parcel post have priority over all other cargo. Next comes air express, and finally air freight. However, with the increased air cargo capacity now available, space priority is not as important as it was at one time.

When he uses air parcel post, the P.A. is doing business with the Post Office department. The same size and weight limitations

governing surface parcel post govern air parcel post. In addition, he can't ship anything that may be damaged by low temperatures or high altitudes. Of course, with air parcel post, there is no pickup service. Shipments are delivered as quickly as practicable by regular delivery service. Special delivery is not included in air parcel post rates and can be obtained only for an extra charge.

Air Express is a service offered by R E A Express. Pickup and delivery service is included in air express rates. Since R E A Express has an agreement with many airlines, it has a wide selection of carriers to choose from in selecting the fastest schedule for your shipment. Also, when bad weather grounds aircraft, R E A Express can use its surface transportation system to speed delivery.

Air freight is the cargo service furnished by the airlines themselves. Air freight rates do not include pickup and delivery service. In other words, rates are quoted on an airport-to-airport basis. Arrangements can be made through the airlines for pickup and delivery service.

How the Forwarder Operates

Air freight forwarder service is offered by private companies which are customers of the airlines. Forwarders operate their own trucks, buy space from the airline, and consolidate small shipments into large shipments. Their profit margin is the difference between the rates they charge their customers for small shipments and the rates they are charged by the airlines for the consolidated shipments. Air

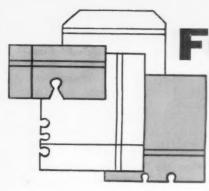
(Please turn to page 177)

Air Versus Surface Transportation

A comparison of time in transit, availability of pickup and delivery service, and rates on shipments of electric motors from New York City to Chicago

ELECTRIC MOTORS SHIPPED FROM N.Y.C. TO CHICAGO	Days	Pick Up Service	Delivery Service	5 lbs.	20 lbs.	40 lbs.	100 lbs.
Parcel Post	3	No	Yes	.75	2.25	No Se 20# Ma	
Bus Package Express	3	No	No	2.05	2.60	3.95	8.00
REA Express	3	Yes	Yes	3.16	4.68	6.70	12.81
Air Parcel Post	1	No	Yes	3.31	12.91	No Se 20# Ma	ervice eximum
Air Express	1	Yes	Yes	3.50	6.20	10.40	23.00
Railroad	5	No	No	Minimu	4.00 um Charg	e—100#	
Air Freight	1	Add 2.00	Add 2.00	Minim	6.00 um Char	ge—50#	8.10
Freight Forwarder	3	Yes	Yes	Minim	6.01 um Charg	e—100#	
Motor Carrier	3	Yes	Yes	6.46	6.46	6.46	6.46
Air Freight Forwarder	1	Yes	Yes	7.05	9.83	13.17	20.10

Rates shown in this chart are for electric motors only. P.A.'s should check with their carriers to obtain the correct rates on other products. A rate relationship that holds true for one product is not necessarily valid for other products.



FORMS FORUM

> NTERESTING innovations have been incorporated in the forms used by Leonard Butters, purchasing agent for Union Steel Products Co., Aibion, Mich.

On the purchase order, for example, Union Steel includes a partial list of the products it manufactures. Since almost every Union Steel supplier is also a potential customer, there's a good reason for putting a low pressure

sales pitch on the p.o. Butters spends about \$5 million a year and his department writes a purchase order on the average of every 15 minutes per day. As a result the product listing on the p.o. gets a great deal of exposure.

Also on the purchase order is a line which gives the vendor the name of someone to contact at Union Steel. This helps eliminate misdirected mail and phone calls.

A special form (see cut of "Material Receiving Record") is used to notify purchasing of partial shipments. When an order is completed in one delivery, the receiving department uses its copy of the purchase order as a receiving report.

Purchase order used by Union Steel carries a partial list of the products it makes. Purpose is to promote sales and to give vendors a chance to think about other Union Steel Products Co. ways their products might be used by Union Steel. Union Steel Products Co. **Union Steel Products Co.** Union Steel Products Co. Tulon Steel Products Co.



Traveling requisition is used at Union Steel for stock items. Top portion of 5" x 8" card is used for item description.

	MATERIAL RECEIVING RECORD	No. 3228
Í		
MICH		
ż		
ALBION		

Special receiving record is used for partial shipments. Complete orders are reported on Receiving's copy of the p.o.

For one-time purchases and non-stock	
items Union Steel uses a form which makes it possible for requisitioner to	
suggest possible sources for the material. Purchasing, of course, reserves the	-
right to make the vendor selection.	

REQUISITION ON							
Date	Purchasin	Purchasing Department					
QUANTITY	DESCRIPTION						
A C NO. FOR							
A C NO. FOR	DATE REQUIRED	ORDER PROM					
FOR DEPT.	APPROVED BY	ORDERED BY					

When Does the Vendor Accept?

To make an order binding, a vendor must at least imply an agreement to ship. Mere notice that he has received the order is not enough.

By Albert Woodruff Gray,

Legal Editor

UNTIL a vendor accepts your order there is no contract and he cannot be held liable for failure to deliver. Conversely, the purchasing agent can cancel an unaccepted order with a clear conscience.

But how do you know if an order has been accepted? If the vendor has made no reply at all, or when he has sent an "acceptance of order," there is no problem; in the first case there has been no acceptance, in the second there has. When the vendor replies with an "acknowledgment", however, there can be considerable doubt about the order's status. It will depend largely on the phrasing of the vendor's reply.

A case involving the Pacific States Sales Corp. (a jobber) and an Illionis manufacturer makes a clearcut distinction between acknowledgment and acceptance.

Only an Acknowledgement

The manufacturer regularly acknowledged the jobber's order with a form memorandum showing the buyer's order number, his own sales number, shipping instructions, and the statement "Sold to the Pacific States Sales Corp." After this was a description of the items that were the subject of the order, with the unit price, extension price, discounts and net price.

Stamped on each of these acknowledgments in red ink was: "This is an exact copy of our order as entered on our books. If

not correct please notify us at once;" followed by: "This is not an invoice. Acknowledgment of order only."

Six months after receipt of these orders the manufacturer wrote, "We are going to make every attempt to deliver your orders. We are entirely at the mercy of our raw material suppliers and our steel situation not only has not improved but has actually declined, which we hope is only a temporary condition."

Not a Contract

When later the jobber sued the manufacturer for damages for failure to fill these orders the defense claimed that there had been no contract and consequently no obligation to ship. He had not accepted any orders the seller said, but merely acknowledged their receipt.

The U. S. Court of Appeals decided in favor of the manufacturer and held that he had assumed no obligation to deliver. In its opinion the court wrote: "Plainly printed on each acknowledgment was, 'Acknowledgment of order only.' The use of the word 'only' cannot be ignored. Every acknowledgment of the receipt of an order is not at law an acceptance thereof. It is not enough that the words of a reply justify a probable inference of assent."

In rendering this decision the federal court followed the pattern set by two New York decisions nearly half a century before.

In one of these instances an order had been given by a farmer for a cider press. The seller had replied on a postal card, "Your order of Aug. 29 for press, etc., received and will have our best attention," signed by the manufacturer.

The decision, in favor of the seller held: "In the postal card the seller notified the buyer that the order was received. 'and will have our best attention.' It would hardly seem to need authority for the proposition that this communication did not constitute an acceptance of the order.

"The acceptance of an order requires consideration not only of the terms of the order but of the responsibility of the party to whom the credit is given. The only obligation expressed in that communication was the obligation to give prompt consideration for the purpose of ultimately determining whether or not the order should be accepted.

Under the law which holds a seller not liable for a failure to deliver after the mere acknowledgment of an order, the contrary is equally true, that an order may be countermanded or cancelled at any time by the purchaser until it is accepted by the seller.

Such a situation occurred when the purchaser of a cash register wrote, "Referring to my order of June 23 for one #542 cash register to be shipped me at once, inasmuch as this register has not been shipped as yet, you may cancel my order for the same."

In its ruling the court quoted the acknowledgment which the manufacturer had sent to the purchaser the preceding week: "This is to acknowledge receipt of your order for one of our #542 cash registers. We thank you for your order and assure you that it will have our best attention."

When the seller brought suit to recover what it claimed was a purchase contract, the court dismissed the action on the ground that the circumstances did not make a contract.

What Does This Mean?

"The only claimed acceptance of the customer's order was the writing of the card wherein the seller acknowledged receipt of the order and 'assure you it will have our best attention,'" the court said. "Was that an acceptance? Was it an agreement on the part of the seller that it would comply with the terms of the order? Did it thereby agree to ship to the purchaser the cash register as soon as possible?

"What does it mean when the seller says, 'We thank you for your order and assure you it will have our best attention'? In what way is the seller to give attention to the order? Does it mean that the seller will investigate buyer's financial ability and ascertain whether a cash register could safely be shipped him, before shipping it 'as soon as possible'?

"Does it mean that the seller may or may not ship the register as the exigencies of the transaction demand? Does it mean that the seller may or may not ship the register as the interests of the seller demand? Does it mean that the order will receive the seller's best attention so that the question of shipping the register may be determined? Did the seller by giving the purchaser its assurance that his order 'will receive our best attention' thereby become obligated to ship the register as soon as possible?

"Suppose the seller had refused to ship the register according to the terms of the order, upon what covenant of the seller to make such shipment could the pur-

chaser rely to recover his damages for non-shipment?

"It is elementary that an acceptance of an offer or proposition made without any present consideration, to ripen into a contract must be certain, sure, complete, unequivocal. A promise on the part of the seller that the purchaser's offer 'will have our best attention' seems to mean nothing more than that the seller will think about the offer-will consider it. It certainly does not mean that the seller has thought about it, has considered it and agrees to accept, abide by and comply with the terms of the offer. It is quite plain that there was no contract between the parties."

However circumstances themselves may alter the meaning of what otherwise would be a mere acknowledgment. Words used in the acknowledgment must be translated with reference to the negotiations and relationship of the parties concerned.

"Entered" Makes It Legal

Upon the receipt of an order from a Michigan telephone company for manhole frames and covers, a foundry replied, "We have entered your order for 500 manhole covers and frames, delivery as directed; at storage yard or on line of work. Thank you for the order which will receive our

prompt and careful attention."

When the foundry later sued the telephone company for refusal to accept delivery of the quantity ordered, the defense was made that the letter acknowledging receipt did not make a contract.

"We understand the contention to be that this did not amount to an acceptance," said the courf in holding that there was indeed a binding and enforceable contract. "The word 'accepted' is not used but the statement that the order had been entered by the seller and thanking the buyer for the order with the assurance that it would receive prompt and careful attention, leaves no doubt or ambiguity as to what was done."

Acknowledging an order for snap fasteners a New York manufacturer wrote: "We herewith beg to acknowledge receipt of the following orders * * *. We agree to have these goods ready in time for shipment on the steamship California, sailing October 16th."

Here again the court held the acknowledgment to be an acceptance, making the offer of the buyer an enforceable contract on which action for damages for a breach could be brought. "The acceptance by the manufacturer of the buyer's order was not drawn with the precision and detail of a formally drawn legal instrument, but it was not neces-



A promise on the part of the seller that the purchaser's order "will have our best attention" means nothing more than that the seller will think about it.

sary that it should be carefully worded," the court pointed out.

"Business men are free to draw their agreements in their own way and letters which fairly show a meeting of the minds of the parties upon the terms of a contract are as competent to bring such a contract into existence, even if somewhat artificially phrased, as if the greatest care was used to apply technical terms to every detail."

With this characterization of the letter of acceptance the court continued, "If they were simply acknowledging receipt of a letter they would have said so and then set forth what they agreed to furnish and would have been bound only to supply that and no more. But when they acknowledge receipt of orders and proceed to specify how the total amounts of both orders was to be shipped, which accorded with the buyer's proposal, they accepted the latter and a contract was made between the parties."

No Binding Agreement

Before a Tennessee court recently, an action by the Calcasieu Paper Co. was defended on the grounds that the paper company had broken the terms of a purchase contract in failing to fill orders which it had received. To these charges the company asserted that it had made no binding agreement on which the buyer's counterclaim for damages could be rested.

During World War II the paper company had endorsed on its form acknowledgment of orders, "Because of the present national emergency we do not guarantee prices, quantity or delivery. The price prevailing at the time of shipment will apply. Priorities, preferences or other limitations of supply affecting our suppliers or us and transportation delay, shall be deemed beyond our control."

For twenty years this customer had been a purchaser from the paper company. During that time the paper company had never used other than a mere acknowledgment of orders showing the date received with the added clause, "All agreements are contingent upon strikes, accidents,

delays of carriers and other hindrances unavoidable or beyond our control."

In this case the court did not accept the defense's contention that this form acknowledgment was not an acceptance. The form's intent, the court said, must be determined not only from its language, but from trade customs.

"A seller's promise that the purchaser's offer will have his best attention certainly does not mean that he agrees to accept, abide by, and comply with the terms of the offer. Words used in the acknowledgment must be translated with reference to negotiations and relationships of the parties concerned."

"We recognize the rule that a mere acknowledgment of the receipt of an order without more, is not an acceptance of the same. Likewise the addition of mere words of business courtesy which do not convey the idea of acceptance, do not make a contract. But expressions which are fairly susceptible of being construed as

an acceptance will be so considered.

"In the instant case we are not dealing however, with one isolated transaction where we are confined to the document itself. On the contrary we have a long course of dealing and many like transactions over the years where merchandise has invariably been delivered on this form of document without further communication between the parties.

"On the other hand it nowhere appears that the seller ever rejected an order or stated that it would do otherwise than ship when conditions permitted. It seems to us, therefore, that even if it could not fairly be determined from inspection of the acknowledgment alone that the same was an express acceptance of the order, the conduct and course of action of the parties shows unequivocally an implied acceptance.

"Thus becomes applicable to the construction of the facts here appearing the rule of practical construction that, the interpretation given by the parties themselves to a contract as shown by their acts, will be adopted by the court and to this end not only the acts but the declarations of the parties may be considered."

- END



Businessmen are free to draw their agreements in their own way which fairly shows a meeting of the minds on the terms of the contract.



FAST DELIVERY -

5,000,000 lbs. of finished bars 8,000,000 lbs. of semi-finished stocks to back-up distributor inventory

Allegheny Ludlum now stocks at the mill depots, Rounds, Hexagons, Squares, Flats and Forging Billets in the ten most popular grades that account for over 85 percent of all stainless bars made. This huge stock of over 2,500 tons backs up the large inven-

tories carried by the authorized Allegheny Ludlum Distributors.

In addition to the finished stock, over 4,000 tons of quality checked rerolling billets and ingots in 30 grades are in inventory to cut delivery time and to insure predictability.

Each month, A-L publishes a Bar, Wire, and Forging Billet Stock List which lists the grades, sizes, and actual pounds of each in stock at the first of that month. It's available to you through the Steel Service Centers authorized to sell A-L Stainless Bars. For the names of the distributors in your area, just call the A-L District Office.



BETTER MACHINABILITY -

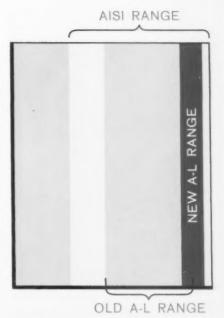
Research, Constant Testing and Controlled Processing Result in Greatly Improved Machinability and Uniformity ... from Lot to Lot

Several years ago, A-L took a hard look at its own stainless steel bars. While quality was good, it could be made better and more uniform, particularly in the area of machinability.

One of the finest metalcutting laboratories in the country was retained to make independent, exhaustive comparative tests on A-L stainless bars and competitive bars. Ratings were based on tool life, determined by turning and drilling tests. A-L's Research Center, probably the largest in the stainless business, correlated these results with metallurgical factors such as composition, microstructural and mechanical properties.

From Research to the melt shops went instructions to revise and narrow the limits of composition. This, combined with processing changes, yields general purpose (stocked) grades with predictable, better machinability.

RESULT: Testing general purpose machining grades as made three years ago with the same grades made today shows better than a 50 percent increase.



ANALYSIS LIMITS

Allegheny Stainless composition limits, already much tighter than AISI Specifications, have been narrowed even further to improve the composition-sensitive machining properties of all A-L Stainless Grades.

MACHINING TESTS

Exhaustive turning and drilling tests on stainless bars of all types pin-pointed the composition and processing variables that most affected machining properties, and made possible the adjustment of these variables for improved machinability and predictability of response from heat to heat. A continuing program of these machining trials serves as an additional safeguard to the quality and unmatched dependability of an A-L Stainless Bar.



TOP QUALITY PROCESSING -

Special Care and Special Equipment Mean Better Bars at Your Machines

What's been your big trouble with cold finished stainless steel bars . . . nicks and gouges, off-size, burred ends, grinding marks, damaged shipments? Glance over the panels at the right, and see how these common faults are eliminated from Allegheny Ludlum cold finished stainless bars.

These are precautions that make a difference between an A-L quality bar and all the others . . . quality you can see, and feel, and measure. Quality that shows up in bar automatics, in all your fabricating.

And this quality is no accident. A few years ago, Allegheny Ludlum investigated stainless bars from the customer's viewpoint. A-L teams held field interviews, toured customer's plants, watched stainless bars undergoing every conceivable fabricating operation. A good part of the trouble was in mill finishing. And A-L revamped their entire finishing operation to suit.

Special equipment is installed, and every operation becomes a matter of painstaking care. Rubber padding covers every work table and inspection table, lines every transfer buggy...chain and cable slings are eliminated, and soft rope substituted... cardboard collars are fitted to bars in process, to prevent rubbing and scratching.

Quality Audit Teams continually audit and maintain quality control standards by making pinpoint quality checks through every phase of production . . . right onto the shipping dock.

Many of these practices have been widely imitated in the industry. Some are still A-L exclusives. But, this is how quality is made . . . stainless steel bar quality . . . by the world's leading stainless steel producer.



HEAT NUMBERS ON EVERY

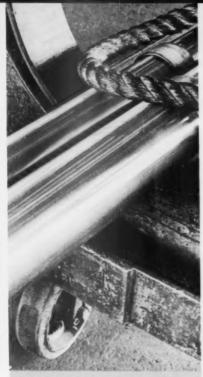
Heat numbers stamped per end of the bar won't wear of rated. Square, clean-cut and make use in bar eutomatics chucking simpler.





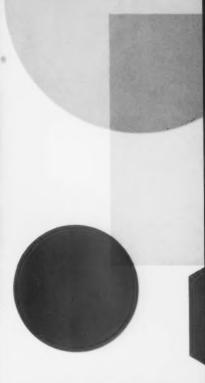
CONSISTENT SIZE AND STRAIGHTNESS TOLERANCES

A-L's famous quality control and inspection procedures mean greater uniformity...minimizes special handling in your plant.



NICK-FREE, SCRATCH-FREE BARS

Nothing harder than cardboard, ropes or rubber ever touches finished A-L bars. Cardboard collars eliminate sliding, metal-to-metal contact...chain or cable are never used.



CAREFUL FINISHING PAYOFF

Multiple passes through centerless grinders result in smooth finish—na spiral grind marks—no chatter marks.



PROTECTED SHIPMENTS

All ba's are protected with cardboard collars and then the bundle is completely wrapped with triple-thickness waterproof paper to protect the superior finish during shipment, Reduces damage in transit.



SMOOTHEST FINISH AVAILABLE

Consistent metal quality and careful finishing result in a surface vastly superior to the industry-accepted average standard.





permanently on one or off, can't get sepot and deburred ends atics easier and make



And if You Want Something Special A-L is a Complete Bar Source

HIGH TEMPERATURE STEELS & ALLOYS

A-L stocks certain finished bars in the most commonly used high temperature steels and alloys plus a large stock of approved billets in these same grades. Needs for bars of A-286, 19-9DL, AM-355, Waspaloy, AL 901, R 41, S-816, M-252, etc., are usually quickly satisfied from this finished and semi-finished stock of Allegheny Ludlum.

FORGING BARS & BILLETS

Also in stock is a full range of forging-quality bars and forging billets from 4 to 30 inches Round Cornered Squares in a wide range of grades, all meeting appropriate specifications.

SPECIAL ANALYSIS AND PROCESSING

For special requirements, A-L is able to tailor-make properties to fit the end use. From knowledge gained in the machining research program, chemistry and processing can be varied to increase a specific property for a particular application. Improvements in such things as hot workability, cold workability, hardenability, finish after machining, improved machinability in non-free machining steels, mechanical properties, corrosion resistance, are examples.

It's something you should discuss with your A-L sales representative.

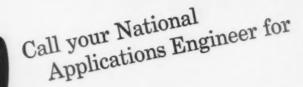
MACHINING AND HEAT TREATMENT DATA

A-L mill and research specialists are available, through the A-L sales representatives, for help and counsel on problems involving Allegheny Stainless Bars. Qualified machining engineers are at your service. These men devote their full time to provide the best service and assistance available anywhere.

NEW BAR BOOKLET

On the printing press now is A-L's new booklet, jampacked with helpful information on using, heat treating and machining Stainless Bars. For a copy of this technical, data-filled booklet, check the A-L authorized distributor in your area, or the A-L Sales Office nearest you, or write: Allegheny Ludlum Steel Corporation, Department QIP 3, Oliver Building, Pittsburgh 22, Pa.





engineering help fast delivery uniform quality special compounds -Rings

National's District Field Offices give you fast service on O-Ring engineering problems and 0-Ring procurement. You talk with seasoned field engineers equipped with the latest O-Ring information and backed up by the plants of one of America's largest sealing products manufacturers. National O-Rings are precision-made, uniform in quality, specified and used by leading equipment manufacturers across America.

NATIONAL SEAL

Division, Federal-Mogul-Bower Bearings, Inc. General Offices: Redwood City, California Plants: Van Wert, Ohio; Redwood City and Downey, California

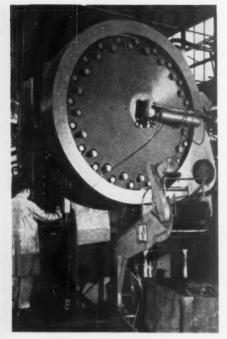


CALL YOUR NATIONAL FIELD ENGINEER

Atlanta 8, Georgia: George W. Smith Company, 394 Williams St., N.W., JAckson 3-7140; Chicago (Franklin Park) Illinois: 10013 West Grand Ave., Gladstone 5-4420; Cleveland 18, Ohio: 210 Heights Rockefeller Bldg., 3091 Mayfield Road at Lee, YEllowstone 2-2720; Dalias 19, Texas: Benson Engineering Company, 2514 West Mockingbird Lane, Fleetwood 2-7541; Detroit 27, Michigan: 13836 Puritan Avenue, VErmont 6-1909; Indianapi882 N. Delaware St., WAlnut 3-1535; Kansas City (Prairie Village) Kansas: Benson Engineering Co., 2902 West 72nd Terrace, ENdicott 2-2843; Les Angeles (Downey) California: 11634 Patton Road, Topaz 2-8163; Milwaukee 4, Wisconsin: 647 W. Virginia Street, BRoadway 1-3234; Red Bank, New Jersey: 16 Spring Street, Shadyside 7-3242; Wiehlta, Kansas: Benson Engineering Company, 519 So. Broadway, AMhurst 2-6971

\$342

Automatic Forging Process Doubles Production Speed



From the finishing end, press ejects trimmed forgings on a continuous conveyor and into tote boxes. The entire operation requires only two menone to load the billet furnace and another to operate press controls.

AN AUTOMATIC forging process that can cut the cost of some forgings by as much as 20% is now operating at the American Brake Shoe Co.'s AmForge Division in Chicago.

The new forging complex, the first of its kind, is notable for these reasons:

• It handles the entire forging process—from billet heating to trimming—without a single manual operation.

• It can produce commercial forgings at least twice as fast as other forging techniques now in use.

 It requires only half the manpower usually employed in conventional hammer or press operations.

• It offers buyers a press forging that is cheaper than other commercial forgings but which is comparable to them in strength and has excellent dimensional tolerances and surface qualities.

The installation consists of a specially designed gas-fired furnace, billet transfer equipment, and a 2500-ton press with automated features. Furnace controls permit a short heating cycle to

bring billets up to temperature. As they leave the furnace, billets are picked up by the transfer equipment and carried to the press, where mechanical fingers move them through a four-stage die. At the fourth station, the forging is trimmed and hot-coined in one stroke, then ejected onto a conveyor line which carries it to a waiting tote box.

Because of its automatic features, the entire process requires only two men. One man charges the furnace; the other attends the control panel in front of the press.

The press itself is a high-speed machine with a 14-inch ram stroke that can operate at speeds up to 40 strokes per minute. For its initial order of track links for crawler tractors, AmForge is running the press at half speed. Yet it turns out 600 links per hour, about double the industry average.

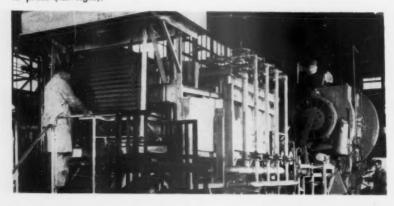
The shorter heating cycle and speedy transfer of billets to the press expose them to the air for only a short time. This reduces scale formation and results in cleaner forgings. It also permits forging to closer tolerances — which should in many cases eliminate the need for additional finishing.

All of these advantages may save the buyer from 10 to 20% of the forging cost, depending on the part and on the volume of the press run.

The new press is most effective producing fairly symmetrical forgings which do not require dies with deep cavities. Because rather lengthy set-up time is required, large production runs are most economical for fully automatic operation.

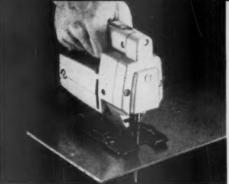
Write No. 18 on Information Card—Last Page

After loading the automatic forging unit, billets pass through the furnace automatically, are rapidly heated to forging temperature, and transferred to press (far right).





NEW IDEA—Electric Hacksaw! Has 2 speeds for cutting all metals from stainless and cast iron to mild steel, non-ferrous metals (Model 701).



NEW IDEA—2-Speed Jig Saw! World's fastest—high speed for cutting wood, plastic, composition; low speed for metals (Model 160).



NEW IDEA—"Burnout-Protection"
Motors. New ultra powerful saw motors
backed by full year free service policy
(on all Skilsaw circular saws).

Do you know about these NEW SKIL Power Tool ideas?



NEW IDEA—Treaded Disc Sander Pad. Prevents disc slippage. Quick change nut locks on steel pins—no clogged threads (all Skil Disc Sanders).



NEW IDEA—2-Way Sander. Orbital action for fast sanding . . . straight line action for finest finishing! Big 4½" x 9" sanding pad (Model 692).



NEW IDEA—3-Way Hammer. Hammers, drills, does both simultaneously for fastest masonry drilling at lowest cost per hole (Model 726).



NEW IDEA—Low Cost Air Buffer and Grinder. Uses super-tough tungsten carbide rasps, rods. Complete kit—Model 412—\$135.00.



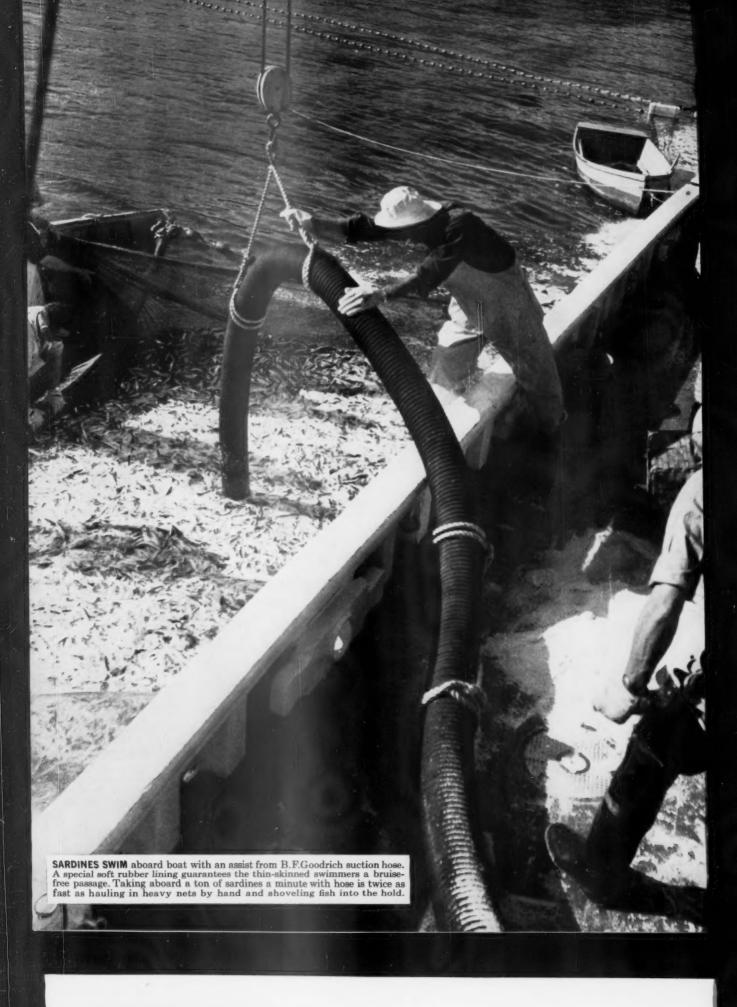
NEW IDEA—Improved 2-Speed All-Purpose Saw. High speed cuts wood, plastic, compositions; low speed cuts metals (Model 700).

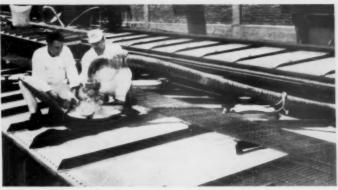


NEW IDEA—Lowest Cost Power Screwdrivers. For light to heavy duty production. Skil Model 139 sells for \$42.50, reversing model 140—\$49.50!

Ask your Skil distributor for demonstrations. Look under "Tools-Electric" in the Yellow Pages. Or write for 68-page catalog: Skil Corporation, 5033 Elston Avenue, Chicago 30, Ill., Dept. 125H







FLOUR BLOWS through hose into a special railroad car. The light, easy-to-handle B.F.Goodrich hose is a cinch to operate. Hook it to a hatch, turn on the blower, and flour speeds through at 800 pounds a minute. Each car loaded this way by a Nebraska miller saves some bakery the \$250 it would cost if the flour were delivered in 100-pound bags.



CEMENT ROARS through hose as it is loaded aboard a river barge. The wear-and-tear of abrasive particles wore out one hose in only two months. Then a BFG hose, lined with the toughest wear-resisting rubber known, was tried. It's still on the job after 15 months, and a half-million barrels or cement handled.

You can't imagine all the stuff that blows, flows, swirls, swims, rushes, roars, gushes and pours through B.F.Goodrich hose

Seems like nearly every time we turn around someone thinks of something new for hose to do.

Take sardines. Commercial fishermen used to haul heavy nets over the side of the boat by hand, then shovel fish into the hold. Then a Maine canner got the idea that maybe fish could be taken aboard by hose. B.F.Goodrich designed a light, flexible hose that picks up fish like a vacuum cleaner.

A manufacturer needed a hose to handle broken glass. BFG developed it. Now it's used in scores of places for transporting brick chips, sawdust, coal and the like.

B.F.Goodrich makes hose to carry almost anything—from blasts of air to torrents of water, for scalding steam, corrosive chemicals, abrasive sand. And when a customer needs something new, we go all out to develop a hose that'll do the job—which explains why today *BFG makes more different kinds of hose than anybody*.

Your nearby B.F.Goodrich distributor can explain the different types of hose we make, tell you what to expect from each, help you decide which is your best buy. B.F.Goodrich Industrial Products Company, Department M-141, Akron 18, O.



HOT, CORROSIVE ACID SWIRLS through B.F.Goodrich hose at a Massachusetts plant manufacturing dyes and finishes for fabrics. The acid is so strong it eats its way through regular rubber hose, causing dangerous, costly leaks. But this acid hose, by BFG, is lined with a new rubber compound that can stand even the most corrosive acids and chemicals.







THE DRY FLUID DRIVE

New soft starts - overload protection



TAPER-LOCK CHAIN COUPLINGS

No reboring - no waiting!



SC, SCM BALL BEARING PILLOW BLOCKS

Quality, for normal and medium duty!

Write for Bulletins!

- ✔ Flexidyne Drives & Couplings.
- ✔ Chain Couplings and Sprockets.
- ✓ Bearings Ball and Roller.

DODGE MANUFACTURING CORPORATION
1300 Union Street • Mishawaka, Indiana



For More Facts Write No. 206 on Information Card—Last Page

Products

Light Elevating Truck Stacks Drums Three-High



A lightweight portable elevating truck can stack fibre and steel drums weighing up to 850 lbs. three high in narrow aisles. Counter-weighted trucks themselves weigh as little as 865 lbs. but require no outriggers. Overall length of truck is 36 in., its width 26-3/4 in., and the required turning radius is less than 42 in. Features include heavy duty brakes, unitized welded construction, alloy-steel masts, built-in charger, safety lowering valve and overload relief valve. American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa.

Write No. 19 on Information Card—Last Page

Portable Air Compressor Has High Capacity



A portable air compressor provides a capacity usually found only in larger units. It will deliver 1.0 cfm of air at 100 psi pressure. Compact unit measures only 28 in. high and 38 in. long and is mounted on 8 in. rubber-

tired wheels. Features include rugged, all-welded construction, bronze bearings, aluminum alloy piston and rod, stainless steel valves, forged steel crankshaft, fin-cooled cast iron head, and 1/2 hp 115 volt 60 cycle a-c motor. Assembly includes pop safety valve, 10 gal. tank, pressure governing switch, and 160 psi pressure gage. Compressor Div., Johnson Service Co., Milwaukee 5, Wisc.

Write No. 20 on Information Card-Last Page

Barrel Rack Feeds by Gravity



A gravity-feed barrel rack saves space and handling costs. Barrels loaded at receiving end roll toward removal end where they are held in position by arrester gate which also acts as shock absorber. Spring-loaded gate permits removal of single barrel at a time from each channel while holding the rest safely in position. Heavy-duty rack, tailor-made for each application, lends itself to use of first-in-first-out method of handling inventory. Dexion, Inc., 39-25 62nd St., Woodside 77, N. Y.

Write No. 21 on Information Card-Last Page

Really Portable Welder Does Man-Sized Jobs

A full 125 amp portable arc welder weighs only 45 lbs. and measures 12 x 16 x 9 in. high. Unit will weld anything from light sheet metal to ½ in. plate. No special electrodes are required. Welding range is from 25 to 125 amps in 12 stages, and unit operates from any 115 to 230 volt a-c

(Please turn to page 106)



SINGLE STRAND



DOUBLE STRAND



SINGLE STRAND, HEAVY SERIES



DOUBLE PITCH TRANSMISSION

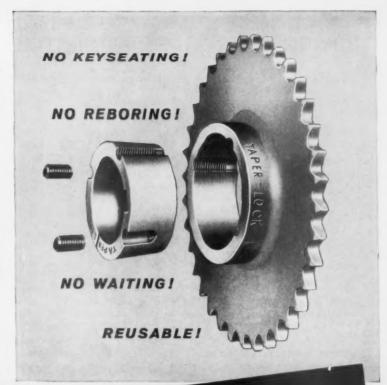


DOUBLE PITCH CONVEYOR



DOUBLE PITCH CONVEYOR, LARGE ROLLERS

CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look under "Dodge Transmissioneer" in the white pages of your telephone directory, or in the yellow pages under "Power Transmission Machinery."



TAPER-LOCK SPROCKETS
DODGE ROLLER CHAIN

DODGE Quality Roller Chain, teamed with Dodge Taper-Lock Sprockets, results in chain drives and chain conveyors that have the precision, efficiency and stamina necessary for the real economy of *long life*.

Moreover, Taper-Lock's reusable bushing makes a difference in overall cost. The ease of Taper-Lock mounting, the elimination of reboring, keyseating, and wasted time, add to the saving. Precision machining and true articulation lengthen the life of *both* sprocket and chain.

The Dodge line of chain, including standard attachments, is extensive. It meets a high percentage of all chain requirements.

In the Double Pitch series (both Transmission and Conveyor) the sizes which require special spacing for perfect tooth action are offered from stock in special double pitch design—to double the life of the chain and the sprocket!

Ask your local Dodge Distributor. Or write us for bulletin.

DODGE MANUFACTURING CORPORATION, 1300 Union St., Mishawaka, Ind.



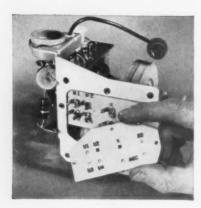
DODGE

of Mishawaka, Ind.

For More Facts Write No. 206 on Information Card-Last Page

BUYING GLASS-BASE LAMINATES?

Taylor Fibre belongs as a supplier of sheets, rods, tubes, copper-clad and fabricated parts

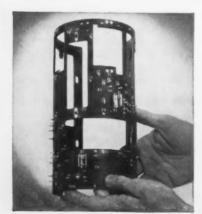




There are good reasons for investigating Taylor glass-base laminated plastics as high-strength-to-weight materials in your design. They offer light weight, corrosion resistance, electrical and thermal insulation, and ease of fabrication.

For example, glass-fabric-base laminates have the highest mechanical strength of all laminated plastic materials. They have been successfully used in the fabrication of critical parts, including aircraft parts and bases for printed circuits. They are most valuable where extremely low moisture absorption, increased heat resistance and superior electrical properties are required.

Taylor Fibre produces a number



of different glass-base grades in sheet, rod and tubular form, and copper-clad. Those with phenolic resin are recommended for mechanical and electrical applications requiring heat resistance. Those with melamine are characterized by their excellent resistance to arcing and tracking in electrical applications. They also have good resistance to flame, heat and moderate concentrations of alkalis and most solvents. Those with silicone exhibit very high heat resistance, combined with good mechanical and electrical properties. They also have highest arc resistance. Those with epoxy offer extremely high mechanical strength, excellent chemical resistance, low moisture absorption, and high strength retention at elevated temperatures.

Technical data about these and other Taylor laminated plastics are available. Ask for your copy of the Taylor Laminated Plastics Selection Guide. Taylor Fibre Co., Norristown 36, Pa.

Taylor

For More Facts Write No. 207 on Information Card-Last Page

Products

(Continued from page 104)

line, with 75 volts open circuit for easy arc starting. Fan-cooled transoidal transformer keeps its heavy duty windings ventilated



and supplies high efficiency with extremely low weight factor. Bren/Weld Sales, Inc., 5114 Third Ave., Brooklyn 20, N.Y.

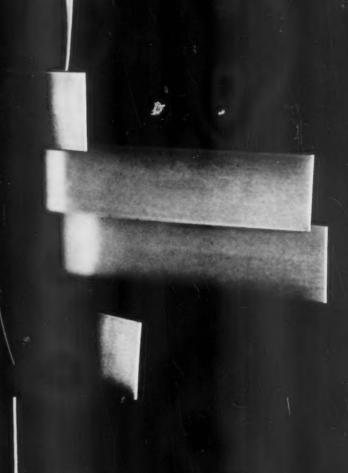
Write No. 22 on Information Card-Last Page

Vacuum Cleaner Features Two Heads



A dry-pickup commercial vacuum cleaner features an unusual head design, one for hard floors and another for carpeted floors, plus dual disposable dust cartridges. Pickup head mounts directly to front of 53 lb. machine and has swivel-bellows neck which allows side-to-side tilt of up to 3 in. and up-and-down movement of 3/4 in., assuring full contact with floor at all times. Each cartridge has its own motor which operates at 1700 rpm and draws 5 amps. at 115 vac/dc. Nobles Eng. & Mfg. Co., 645 E. Seventh St., St. Paul 6, Minn.

Write No. 23 on Information Card-Last Page



FINGERS OF STEEL . . .

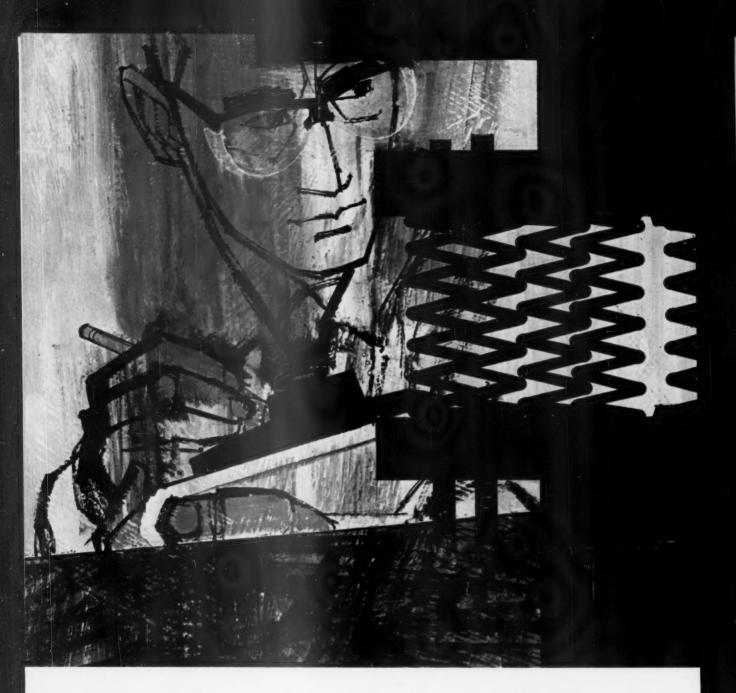
... high-carbon spring steel from the Athenia Steel Division of National-Standard is available in widths up to $6\frac{1}{2}$ " tempered and 16" cold rolled or annealed, with thicknesses from .001" to .065".

The high quality and uniformity of Athenia spring steel is the result of precision rolling, polishing and slitting to rigid standards on the most modern equipment. Athenia Steel is available from National-Standard Company, Clifton, New Jersey, and from the following: National-Standard Warehouse, Plainville, Conn.; D & B Steel Co., Cleveland; Krusen Wire & Steel Co., Los Angeles; Lapham-Hickey Steel Corp., Chicago; Voss-Davidson Steel Co., Detroit; Zurbach Steel Co., Somerville, Mass., Plainville, Conn.

For technical information, write to ...



Athenia Steel Division
NATIONAL-STANDARD COMPANY
Clifton, New Jersey



New N-S stainless wire tests 100,000 psi

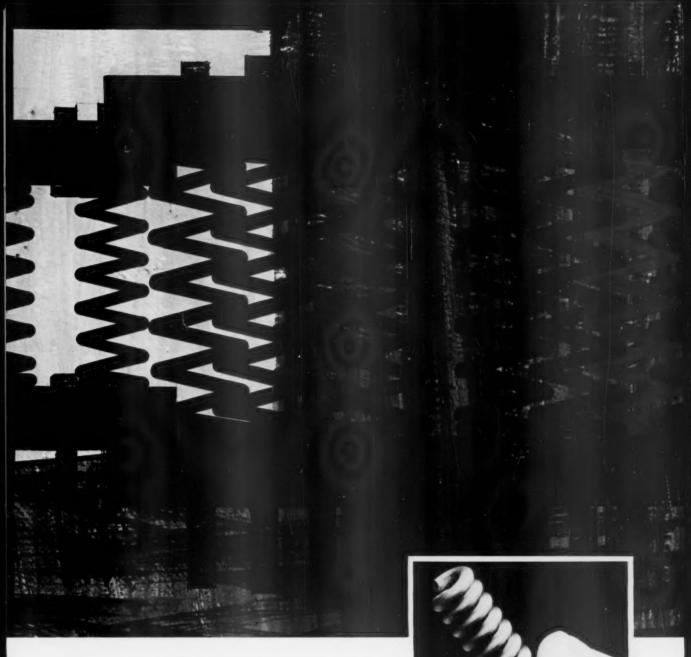
From National-Standard research and development comes NS-355—a stainless steel, corrosion resistant spring wire having much greater elasticity than conventional stainless steel wire.

NS-355 is a semi-austenitic alloy, originally developed for use in heavy wire sections fabricated from bar, billet or plate stock—applications requiring corrosion resistance, strength, durability and hardness. National-Standard searched for a way to apply these outstanding advantages to highly stressed spring wire applications.

After comprehensive research in processing methods, National-Standard metallurgists developed the

capability to draw NS-355 alloy into exceptionally high-tensile spring wire. Spring production tests were made on .125 and .075 inch diameter wire samples with a tensile strength over 100,000 psi higher than music spring wire, proving that NS-355 wire could be satisfactorily run on automatic coiling machines with excellent formability.

Further evaluation tests were conducted in the Spring Laboratory of Bendix Corporation, South Bend, Indiana. Here, engineers ran life cycle tests on NS-355 stainless steel springs and determined spring modulus values. On a mechanical cycling unit—eight springs to a fixture—NS-355 springs



above music wire

were subjected to 600 compression cycles per minute—a total of 10-million cycles under stresses from 20,000 to 150,000 pounds.

The development of NS-355 stainless steel spring wire creates an entirely new solution to highly stressed, corrosion resistant spring requirements for jet engines, food and beverage equipment, chemical machinery and a growing number of other special wire applications.

For more information about new NS-355 stainless steel spring wire, or help in developing high quality wire to meet your special or unique applications, write National-Standard Company, Niles, Mich.



National-Standard NS-355 stainless steel springs with an index as low as 3 can be formed on automatic coiling machines without breakage.



Manufacturer of Specialty Wire & Metal Products

NATIONAL-STANDARD COMPANY
Niles, Michigan 61-W03

Purchasing Agents
HERE'S A HOIST
YOU REALLY
CAN'T AFFORD
TO OVERLOOK
WHEN BUYING

Lodestar

the newest of hoists...the first truly heavy-duty version of the small electric hoist.

...a hoist with features and performance never before available in a small electric hoist.

... a hoist that is priced surprisingly low because of its more efficient design and automated production.



CHISHOLM-MOORE HOIST DIVISION

Request catalog and name of local stocking distributor

Columbus McKinnon Corporation

Tonawanda, New York

REGIONAL OFFICES: NEW YORK • CHICAGO • CLEVELAND
In Canada: Columbus McKinnon Limited, St. Catharines, Ontario

For More Facts Write No. 209 on Information Card-Last Page

Products

Transparent Tubing Comes in 76 Sizes



Transparent butyrate plastic tubing comes in 76 standard sizes ranging from .750 in. O.D. with a 1/16 in. wall thickness up to a 6.625 in. O.D. with a $\frac{1}{4}$ in. wall thickness. Tubing is clear as glass, but has few of glass's mechanical or physical disadvantages. It is highly machinable and can be drilled, sawed, tapped, lathe-turned and cut. Material is comparatively inert, and can be used safely with many chemicals. Impact strength of 2 ft-lbs per in. of notch at 73.4 F drops to only 0.9 ft-lbs at minus 40 F. Busada Mfg. Corp., 32-21 Downing St., Flushing 54, N. Y.

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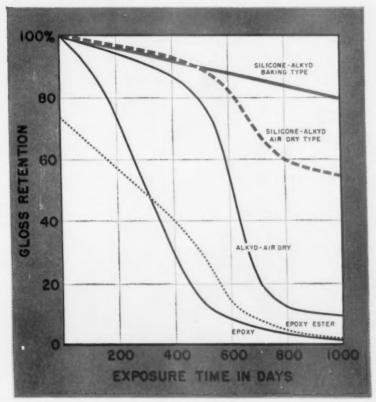
Tool Has Automatic Self-Centering Feature



A recently developed tool has a number of worthwhile features in drilling, reaming and other machining applications. Tool will selfcenter stock and center drill it for machining or grinding, regard-

(Please turn to page 113)

Why Hire Part-Time Paint?



Silicone-based paints last longer, cost less

It makes little sense to keep an employee that doesn't have the qualifications or capacity to do the job. Yet this is, in effect, exactly what many plants do when they use maintenance paints that break down shortly after application. To be sure, a coat of paint doesn't punch a time clock or demand fringe benefits, but it does have to work twenty-four hours a day. Thus, its cost of "employment" warrants considerable attention.

In practice, it's the interval between paintings that really determines your cost. The longer a paint film lasts, the less it costs to use—in time, labor and material. But perhaps most important are the costs that can't be calculated—for example, production lost when facilities must be shut-down for repainting.

Here's how you can save. By reducing labor costs and production down-time, paints based on Dow Corning Silicones make important contributions to your profit picture. Silicone paints, of course, take just as long to apply as do conventional paints. And like other high quality products, they are premium priced. But once they're on, they stay on, and on, and on, and then your savings start to pile up.

What makes silicone-based paints the good investment they prove to be? The simple answer is—greater resistance to the many enemies that maintenance coatings must face day and night. Included on this list are heat, cold, moisture, rust, corrosion, salt spray, ozone and the many other paint-killers that assault plants and equipment.

Hot spots no trouble now. When exposed to heat that, on some stacks and mufflers, soars to 1000 F, ordinary paints crack, peel and burn away. Moisture gets in. Rust, corrosion and trouble follow fast. But not so when you're using paints made with Dow Corning silicone resins. They are at their best when the "heat's on".

Some equipment is hot on one end and cold on the other . . . silicone paints hold tight on both ends. Film, gloss and color retention are excellent as well. There's no unsightly chalking, fading or streaking.

Concerning color: silicone-based coatings are now available in almost any color desired. Hot-running equipment and piping can be color-coded for increased safety and efficiency. And as some refineries have learned, a plant made more colorful and attractive helps improve public relations.

Best for your products, too. Silicone paints will work just as hard for you on the products you sell. Product finishes based on silicones keep color and gloss without fading or chipping just as their maintenance-coating fellows do. They stand up longer to hard wear, heat and abuse . . . improve customer satisfaction.

It all adds up to this: paint maintenance is probably costing you a lot more than it should. In many cases, this cost can be cut in half by using silicone paints that last up to 100% longer. So every time you think about paint — for maintenance or products — consider paints based on Dow Corning Silicones. Most leading paint manufacturers now offer these longer lasting coatings . . . coatings that really protect valuable plants and equipment.

Send for your copy of "Why Silicone-Based Paints Mean Less Maintenance". Write Dept. 7220.



Dow Corning CORPORATION

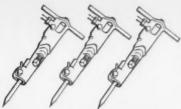
MIDLAND, MICHIGAN

ATLANTA BOSTON CHICAGO CLEVELAND DALLAS LOS ANGELES NEW YORK WASHINGTON, D. C. For More Facts Write No. 210 on Information Card-Last Page

The Porter Alloyist delivers the right alloy IN THE SPOTS THAT COUNT



For More Facts Write No. 211 on Information Card-Last Page



There can be no compromise in metals for those tougher, tool-killing jobs. That's why the Porter Alloyist recommends Grade D phosphor bronze for the rifle nut in air hammers... the critical part of the tool that absorbs hundreds of vibrations a minute at high impact pressure. Produced at a special temper, this alloy has the required toughness and durability to do the job and to help keep tool maintenance costs low.

THE PORTER ALLOYIST IS A SPECIALIST IN A WIDE RANGE OF SPECIAL METALS

Porter's Riverside-Alloy Metal Division is your single reliable source for specialty alloys in 8 basic groups of wire, rod and strip . . . phosphor bronze, nickel silver, cupro nickel, brass, stainless steel, nickel, Monel and Inconel.

Ask for a free copy of "Alloys for Industry" describing our wide range of specialty alloys. Write H. K. Porter Company, Inc., Riverside-Alloy Metal Division, Riverside, N.J. Or contact our sales offices in Hartford, Chicago, East Orange, Atlanta, Cleveland, Detroit, Cincinnati, Los Angeles and Rochester.



PORTER nickel wire is used extensively in vacuum tubes and in other components for the electronics industry.

PORTER carbon steel wire reinforces hose for air hammers and other industrial equipment.



RIVERSIDE-ALLOY METAL DIVISION H. K. PORTER COMPANY, INC.

For More Facts Write No. 211 on Information Card—Last Page AUGUST 28, 1961

Products

(Continued from page 110)

less of shape—round, square or rectangular—because the nose piece is funnel shaped. Tool is spring-loaded and outer housing holds stock firmly in position, as pressure from spring is forced against the stock. It can be used for center drilling, center reaming, pipe reaming and many other uses where dead centering is required. Raymond Paslawsky Co., 201 Morehouse Highway, Fairfield, Conn.

Write No. 25 on Information Card-Last Page

Nylon Sling Holds Five-Ton Loads



A sling for lifting heavy objects by crane or helicopter claims many firsts. Made of very heavy duty nylon webbing, each of four legs will support 10,000 lbs. and the nylon lift ring will support 40,000 lbs., giving the sling a fiveton working capacity. Central feature, however, is adjustability of each leg length in seconds. Nylon lift ring can be disassembled with screw-driver, making field changes possible without sewing. Nylon webbing is 13/4 in. wide, and whole assembly weighs less than 30 lbs. General Logistics Div., Aeroquip Corp., 2929 Floyd St., Burbank, Calif.

Write No. 26 on Information Card-Last Page

Self-Sticking Panels Mark Safety Harzards

Self-sticking, diagonally striped panels of tough .005 in. thick vinyl plastic give visual signal of safety hazards or mark location of protective and safety equipment. Black and yellow striping is embedded in plastic, and colors cannot fade or wear off. Easy-toapply panels are cheap and outwear paint seven-to-one. They can be used indoors or out and are



stocked in three sizes: $5\frac{1}{2} \times 17$ in., 11 x 17 in., and 17 x 17 in. W. H. Brady Co., Dept. 143 R, 727 W. Glendale Ave., Milwaukee 9, Wisc.

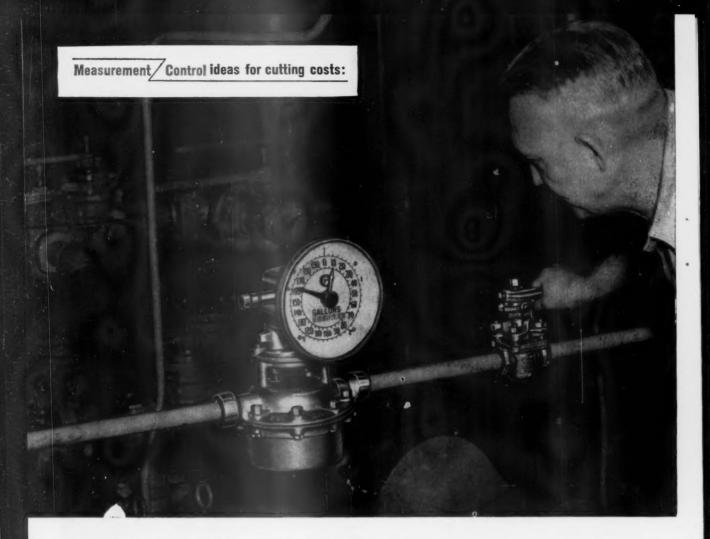
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Packaging Material "Floats" Heavy Loads



A heavy-load packaging material is said to have the highest energy-absorption characteristics of any known cushioning medium. Similar in appearance to standard rubberized curled hair sheet stock, material is made by bonding millions of permanently-set curled animal hairs together with special latex binder. Hairs absorb shock like springs and "float" item being shipped. Light-weight, re-usable product is available in sheet and special die cut forms. **Cushioning Products Div., Armour** Alliance Industries, 16123 Armour St. NE, Alliance, Ohio.

Write No. 28 on Information Card-Last Page



HOW TO SAVE TAX DOLLARS THESE DAYS

Profit these days always has to be concerned with the phrase "after taxes." At a large process plant sewage taxes were being paid on the basis of all water consumed. But a sizable portion of this water was actually used as "raw material" for finished products and never reached the sewage lines. A Rockwell engineer suggested putting liquid meters* on process units to accurately record the water consumed in production. By proving that large quantities of water going into the plant were not discharged as waste, sewage tax bills were cut drastically.

This is just one example of the many ways a Rockwell field engineer can help you track down new and different ways to cut plant costs with measurement and flow control devices. Rockwell has more experience than any other single source for this kind of cost cutting. That's because Rockwell, as the world's largest manufacturer of a complete line of meters, valves and regulators, has been asked to solve more problems.

Wherever liquids, gases or slurries flow through pipes in your plant, you probably can save time, money or materials with new or improved methods of measurement and control. It's easy to find these cost cutting opportunities—just have a Rockwell field engineer visit your plant by sending in the coupon today.

* Rockwell makes meters to measure a variety of liquids—water, oil, chemicals and other industrial fluids.

ROCKWELL

The leading single source for Measurement Control products and ideas



HOW MUCH COULD YOU SAVE?

There is hardly a plant anywhere—including yours—where the right application of the right measurement and control methods and equipment won't produce savings many times the modest cost involved. Certainly it's worth investigating—especially since it will cost you nothing to find out. Simply mail the coupon now.



"IN-PLANT" METERING:

LIQUIDS AND GASES

Rockwell gas and liquid meters, properly applied, can improve quality control, sharpen cost control, and prevent waste in almost every plant department. A Rockwell Field Engineer can help you find where meters will cut costs . . . and Rockwell has a complete line of meters to measure practically anything that will flow through pipe.

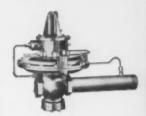




CONTROLLING PIPED MATERIAL:

LIQUIDS AND GASES

More efficient control of all the material flowing through pipes in your plant is a positive step in cutting costs. There are new applications and new ideas for using gas pressure regulators and valves that will stop wasteful, inefficient, and dangerous handling of fuels, production fluids, and products. A Rockwell Field Engineer can show you where and how.





MEASUREMENT AND CONTROL DEVICES

all fine products by

ROCKWELL



Rockwell	Manufacturing	Company,	Dept.	мсзн,	Pittsburgh	8,	Pa
01	t 116 6	-b-shed		V-612			

Please send me literature as checked

- Valving gas, liquids and slurries. Bulletin
- Measuring gases. Bulletin 1085
- Regulating gas pressures. Bulletins 1044, 1059, 1082, 1086
- Measuring liquids. Bulletins P-100, PI-666, OG-400
- Condensed catalog of all products. Bulletin C-5000
- Please have your Field Engineer call.

Name

_Title__

Company

Address

City____

Zone___State

Products

Aluminum-Vinyl Laminate Comes in Many Colors



A laminate of aluminum sheet and vinyl plastic film is intended specifically as a tool for designers and stylists. Vinyl-clad aluminum comes in almost infinite range of coatings, embossed and printed with up to five colors. It is offered in 39 design-color combinations, or with any commercially available vinyl plastic film, or with designs specifically developed for the user. Laminate is available as flat or coiled sheet in widths up to 48 in. and lends itself to high-speed, volume production. Aluminum Co. of America, 791 Alcoa Bldg., Pittsburgh 19. Pa.

Write No. 29 on Information Card-Last Page

Portable Device **Detects Metal Flaws**



A magnetic device portable enough for field use is designed to detect cracks and flaws in ferrous metals. Device supplements a number of radio-graphic and fluoroscopic systems used in nondestructive testing. A-C/D-C 14 lb crack detector is essentially a powerful U-shaped two-pole electromagnet which can be energized from six or twelve volt auto storage battery or from 110 volt outlet through built-in rectifier. With surface coating of ferromagnetic powder, invisible hairline cracks or flaws can be detected as deep as 1/2 in. below the surface. X-Ray Dept., Westinghouse Electric Corp., P.O. Box 416, Baltimore 3, Maryland.

Write No. 30 on Information Card-Last Page

Wet Blast Unit Cuts Size and Air Needs



A compact, low cost, general utility wet blast cabinet incorporates important new design features. Unit is intended to meet intermittent need for heat treat scale removal, cleaning prior to plating, cutting tool honing and general metal finishing in large and small plants. Fabricated of stainless steel, unit stands 57 in. high and occupies floor space only 22 in. wide by 22 in. deep. Blast gun is suspended by its air and slurry hoses and is trigger actuated. Slurry agitation is mechanical, reducing air requirements to absolute minimum. Pressure Blast Co., Inc., 27 Pleasant St., Manchester, Conn.

Write No. 31 on Information Card-Last Page

Heating Cathode Warms Up in 100 Milliseconds

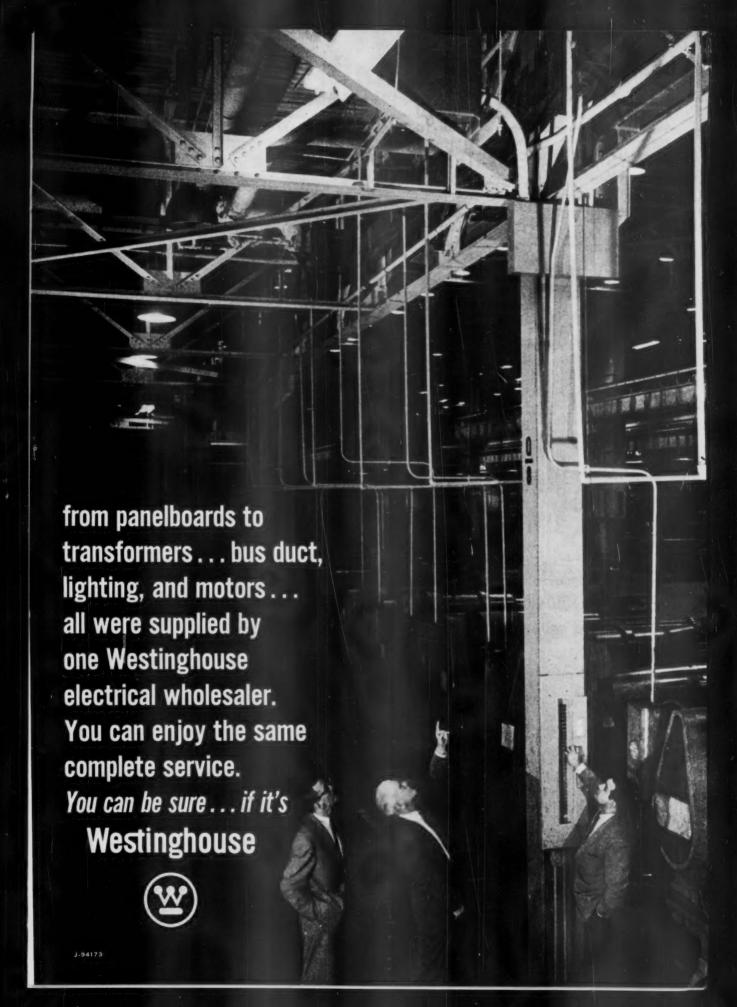
A heating cathode which is called the fastest ever produced is capable of delivering full power in 100 milliseconds. Cathode will (Please turn to page 120)

Cincinnati 38. Ohio



Tucson, Ariz.

San Juan 23, P.R

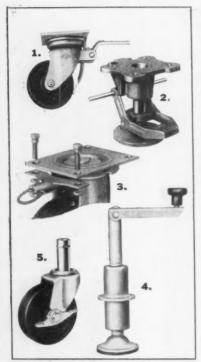


MATERIALS-HANDLING NEWS

NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLEMS

5 WAYS TO MAKE CASTERS MORE USEFUL

These Bassick optional features and accessories can help you solve a wide range of materials-handling problems.



1. Combination wheel brakes and swivel locks-available on the popular Bassick "H99" truck caster and Series "87" and "99" scaffolding casters. Can hold a wide variety of portable equipment and stands securely in position. 2. Separate position locks -compress against the floor to lock equipment securely in place. Position locks step up flexibility and versatility of trucks, maintenance and assembly stands and portable equipment. 3. Detachable swivel locks - can be added at any time to 6" and 8" Bassick "H99" and all sizes of "S99" that are equipped with a notched ring to accommodate the lock. 4. Levelizing jacks-provide an economical, practical way to level and stabilize portable equipment. Function on rugged screw-jack principle, operated by folding crank. Five ton capacity, each jack. 5. Wheel brakes alone are optional on a great many casters, including the series "68" scaffolding caster shown here. Brakes are easily engaged or released by a touch of the hand

Can Casters roll <u>you</u> out of a profit squeeze?

A leading financial daily recently reported that efficient warehousing and materials-handling had saved one manufacturer an estimated \$300,000!

Today, more than ever, streamlined materials-handling is providing industrial leaders with an opportunity to cut costs, increase profit margins.

Bassick casters are playing a big part in this trend. In the larger plants and warehouses, Bassick casters make possible more efficient, longer lasting, more economical operation of fully-automated power pulled drag lines. And a tremendous variety of other Bassick models are cutting costs in lighter applications.

10,000 CASTERS

Bassick, world's largest caster maker, offers more than 10,000 casters and

floor protection items. Whatever your caster needs, in factory, warehouse, office, retail store, hospital or institution, or home, there's sure to be a Bassick that's exactly right for you.



Bassick truck casters save floors, cut maintenance. They'll help you widen "profit squeeze" between costs and sales.

THE
BASSICK COMPANY
BRIDGEPORT 5, CONN.
IN CANADA:
BELLEVILLE, ONT.







"File-Hard" bearing races mean long life, low maintenance



This easy-to-make file test shows the extra hardness of Bassick swivel bearing parts.

Bassick cold-formed steel casters will pass the test with flying colors. They're fully case hardened to 15N90 Rockwell for years-longer service. This means swivel bearing balls do not penetrate raceways.

Try the "file test" on these outstanding casters:



"H99" - combines easy swiveling, easy rolling and ability to take roughest abuse. Load capacities up to 900 lbs. per caster.



"68" - Light loads move easily on Series "68" plate casters, featuring unique Bassick "Diamond-Arrow" two-level ball race construction. Loads to 200 lbs. per caster.



"599" — a super swivel caster, built to take the abuse of power pulled applications. Load capacities range up to 2500 lbs. per caster.

Your Bassick Distributor

is the man to see about every caster problem. He sells the most comprehensive caster line in existence and carries most popular models in stock for immediate delivery.

For More Facts Write No. 215 on Information Card-Last Page

Selection of finest raw materials

Testing every step of the way

Inspection to rigid standards

Assure 100% dependability for OHIO WFINFN

UHIU WELUEU PRESSURE TUBING

You can be sure — doubly sure — of utmost tubing dependability when you specify Ohio Welded Pressure Tubing — made by Ohio Seamless. First, Ohio works to accepted industry standards — ASTM, ASME, and similar Federal and military specifications covering welded pressure tubing. Second, Ohio Welded Pressure Tubing is produced under a continuous process of quality control — not just a final test inspection to cull questionable material.

Carefully selected prime raw material is slit, edged, shaped and electric resistance welded on the most versatile and modern equipment in operation. At each and every step of the way Ohio Welded Pressure Tubing is under the scrutiny of Ohio's master tubemakers... making control tests at frequent intervals... testing random samples from each production order far beyond the limits of the usage involved.

For critical pressure piping applications... for condensers, heat exchangers, boilers and superheaters—in the range of sizes from ½ to 7½" OD and wall thicknesses from .028 to .375"— mark your prints "Ohio Custom Made Welded Pressure Tubing." There is no equivalent.



Photographs show flare, flattening and crush tests performed continuously on every order. Non-destructive tests include air, water, magnetic, eddy current and visual inspection to insure 100% dependability.

Photomicrograph of polished and acidetched surface shows perfect microstructure of normalized Ohio Welded Pressure Tubing. Weld area running down the center is now indistinguishable and tube has become, in every sense, weldless.



OHIO SEAMLESS TUBE

Division of Copperweld Steel Company SHELBY • OHIO

Seamless and Electric Resistance Welded Steel Tubing . Fabricating and Forging

Representatives in principal cities. Check leading directories: THOMAS', MacRAE'S, CONOVER-MAST, SWEET'S, FRASER'S.



Specify BLAW-KNOX Electroforged® Steel Grating

A primary function of open flooring is to admit light and air to areas above and below its surface . . . to provide safer, more comfortable working conditions. Blaw-Knox Electroforged Steel Grating is designed to provide maximum open area.

Load requirements establish equal bearing bar dimensions for all types of grating, in equal service. Because it is Electroforged, Blaw-Knox grating can get maximum strength from crossbars only 1/4 inch square. This means less obstruction to light and air, and safer, more comfortable working conditions above and below.

Visibility is only one way Electroforged grating increases safety. Sure footing is provided by the non-slip, twisted crossbar and a choice of either square, or serrated bearing bars. Electroforged grating is self cleaning, too. There are no joints or crevices to collect dirt and grease.

BLAW-ENOX

AND STALE TRIBASIS

BUTCHER DEPOSIT (INSTANCE)

Electroforged grating also is available in other materials such as Cor-Ten and aluminum. Write for Bulletin 2581 for further information. Blaw-Knox Company, Pittsburgh 38, Pa.

Blaw-Knox Equipment Division

BLAW-KNOX

GRATING

For More Facts Write No. 217 on Information Card-Last Page

Products

(Continued from page 116)

be incorporated in full line of tubes to be used as RF power output stages in transistorized mobile and airborne equipment. It warms up so quickly that one can transmit instantly from cold



start, eliminating need for standby currents which generate heat and adversely affect temperaturesensitive semi-conductors, in addition to creating power supply problems. Very low voltages, on the order of 1.6 volts, are sufficient for operation. Amperex Electronic Corp., Power Tube Div., 230 Duffy Ave., Hicksville, L. I., N. Y.

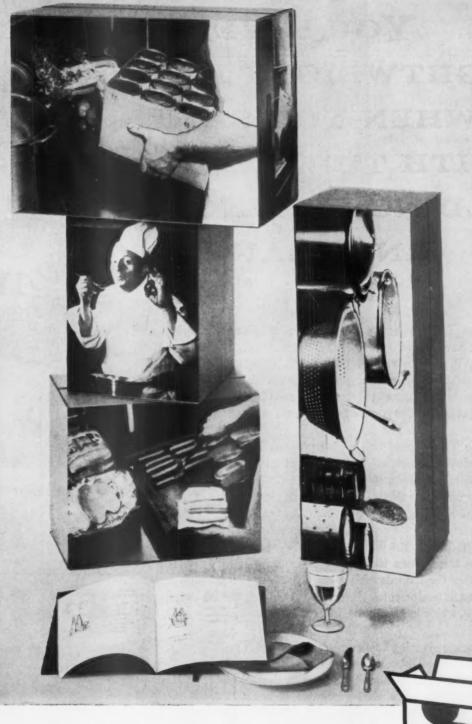
Write No. 32 on Information Card-Last Page

Automatic System Saves Belt Cleaning Time



An automatic conveyor belt cleaning system which features one-man operation speeds clean-up time on flat rubber belts, steel mesh belts, metal elevators and elevator belts, etc. With this system, 200 ft. conveyor belt operating at average speed of 20 fpm can be cleaned in ten minutes. System operates on plant steam

(Please turn to page 124)



Millions of menus in corrugated

Hot dogs and hamburgers at a drive-in...gourmet meals in an exclusive restaurant. Behind every bill of fare is a steady flow of food in corrugated boxes. And millions of them are made by Hinde & Dauch Division. Leading food processors depend on H&D for economical shipping containers in volume—plus expert technical services to keep costs low.



West Virginia
Pulp and Paper

Hinde & Dauch Division

16 Plants • 42 Sales Offices • Sandusky, Ohio

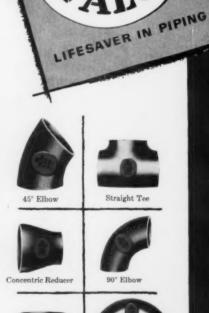
YOU SAVE MOST WITH
LIGHTWEIGHT PIPING
WHEN YOU SAVE
WITH TUBE TURN
WELDING FITTINGS
AND FLANGES

Process piping systems designed with new lightweight carbon steel piping have scored impressive cost reductions. Users report 30% savings in pipe costs alone. Lightweight piping weighs 20% to 50% less than standard wall carbon steel pipe . . . it's easier to handle, cut, align, weld and support . . . can be installed 25% faster. Lightweight piping also provides greater flow area, saves on pumping costs.

Tube Turns paced this piping progress by developing the first complete line of lightweight fittings and taper face flanges. Forged from seamless carbon steel pipe, TUBE-TURN lightweight fittings feature uniform wall thickness and true circularity... assures perfect pipe-to-fitting alignment, permits field cutting of odd angles, too.

TUBE-TURN 125 lb. lightweight forged steel taper face flanges provide three times the sealing capacity of ordinary flanges... eliminates the hazards of breaking cast iron or semi-steel valves, fittings, and equipment. TUBE-TURN lightweight taper face flanges cost less, weigh less, and take less storage space.

If you are planning lightweight piping systems, be sure you specify TUBE-TURN lightweight piping components for maximum savings, performance and dependability. Look for the famous "tt" trademark when you buy. It's your guarantee of quality... the mark of known value. Write today for Bulletin TT942H251 TUBE TURNS, Louisville 1, Kentucky.



TUBE-TURN Light Weight Fittings are available in sizes ½" through 24"—in schedule 10 and API-5L wall thicknesses.



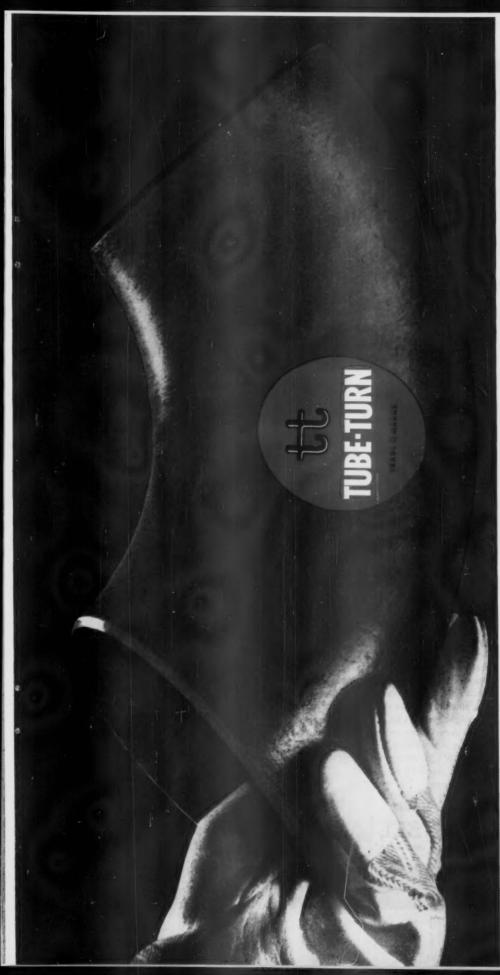
TUBE-TURN 125 lb. Light Weight Taper Face Welding Neck Flanges are available in sizes of 2" through 24".

TUBE TURNS

Division of



Corporation





LIFESAVER For The Men Who Design Piping

Tube Turns offers not only the most complete line of properly engineered lightweight piping components for utmost flexibility in planning any piping installation, but a wealth of technical data and able engineering assistance without counterpart anywhere in the world. Standardizing on TUBE-TURN piping components saves time and trouble.



LIFESAVER For The Men Who Buy Piping

The world's most complete line of lightweight fittings and taper face flanges permits every specification to be met without compromise or delay. A fully responsible Tube Turns Distributor is as near as your telephone to give prompt delivery of all your needs from one source on a single order. Saves time, paperwork, multiple checking, piecemeal deliveries and the inevitable problems of divided responsibility. You save money when you standardize on TUBE-TURN piping components!



LIFESAVER For The Men Who Install Piping

Time is money in the assembly of a welding piping system. TUBE-TURN lightweight piping components do not require remanufacture or compromises . . . or the delays that result from rejections. They are uniform, precision-engineered for easy, time-saving installation. And you can put them in and forget them because they are dependable. TUBE-TURN piping components cost less because they save more in every way!

TUBE-TURN Lightweight Fittings And Taper Face Flanges Are Stocked By And Sold Exclusively Through Authorized Distributors.



*Examples shown are greatly enlarged cross-sectional views of selected standard and special shapes available

The right shape <u>plus</u> the right finish equals lower production costs

with CONTINENTAL® round and special shaped wire

Face up to the pleasant fact that you can often shave your production costs appreciably—and win extra sales—by choosing the right shape in wire. You save because you eliminate forging, stamping, rolling or machining operations. What's more, you can get these ready-made shapes (and many others than shown) in bright, galvanized, coppered, liquored, or tinned finishes that save further in polishing and plating. If you use low and medium low carbon steel wire in any shape, form or finish, by all

means learn what Continental can offer you. We have solved literally thousands of problems involving wire. We'd love to have a shot at solving yours.

Write for free copy of our new wire manual

CONTINENTAL STEE

CORPORATION

KOKOMO, INDIANA



PRODUCERS OF: Manufacturer's Wire in many sizes, tempers, and finishes, including Galvanized, KOKOTE, Flame Sealed, Coppered, Tinned Annealed, Liquor Finished, Bright and special shaped wire. Also Welded Wire Reinforcing and Galvanized Fabric, Nails, Continental Chain Link Fence, and other products.

Products

(Continued from page 120)

and cold water. Multiple high pressure nozzles are permanently positioned over and under conveyor. Powerful jets of hot water and detergent against belt surface at pressures of 125-150 psi eliminate hand-scrubbing. Sellers Injector Corp., 1600 Hamilton St., Philadelphia 30, Pa.

Write No. 33 cn Information Card-Last Page

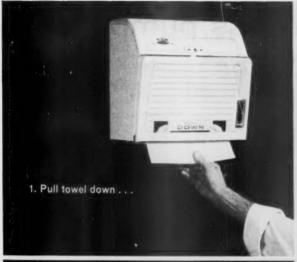
Teflon Steam Hose Resists Corrosion



Fatigue-resistant flexible hose for steam and other high-temperature liquid applications is designed to extend service life of flexible connections. Cost of non-aging and corrosive-proof hose is comparable to that of conventional metal hose. One-piece brass male or JIC swaged fittings eliminate steam leaks by eliminating welded fittings. Hose is Fluoroflex-T covered with either bronze or stainless steel braid. As a steam line, hose is rated up to 250 lbs. of pressure; as a general service line, up to 500 psi and 500 F. It comes in sizes from 1/8 in. male pipe thread end fitting to 1 in. male pipe thread. Resistoflex Corp., Roseland, N. J.

Write No. 34 on Information Card-Last Page







The Steiner Serva-Matic

WORKS
to Cut

YOUR

towel costs



When you combine the economy of Steiner roll towels with the controlled, automatic dispensing of the Steiner Serva-Matic, you get results that can reduce your towel costs by as much as 30%.

Controlled dispensing —You can adjust the Serva-Matic to dispense towels at the rate you want—the best rate for your washroom traffic flow. The Serva-Matic automatically dispenses one unfolded towel that's ready to use. Users can take only the towels they need. There is no opportunity to grab a handful that isn't needed or used and then thrown away.

Automatic dispensing-The Serva-Matic is the

only dispenser to eliminate buttons, cranks and tear offs. Automatic dispensing eliminates waste and increases user satisfaction. The Serva-Matic uses economical roll towels. One case of Steiner roll towels equals approximately two and one-third cases of folded towels. You need less inventory and less storage space with Steiner roll towels.

Complete line—Steiner Company offers you controlled dispensing of sanitary paper products for every washroom need. Why not write today for more information on the advantages of economical controlled dispensing for your washroom?



AMERICAN AUTOMATIC



DRI-MASTER Roll Towel Dispenser



TISSUE-MASTER Tissue Dispenser



740 Rush St.



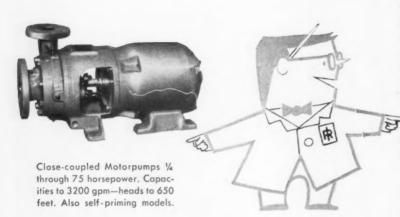


For More Facts Write No. 221 on Information Card-Last Page

when you discuss pumps what does

NPSH

mean to you?



THE TECHNICAL DEFINITION

NPSH means NET POSITIVE SUC-TION HEAD and is the total suction head in feet of liquid absolute, determined at the suction nozzle and corrected to datum, less the vapor pressure of the liquid in feet absolute.

BUT THERE'S ANOTHER MEANING TOO

To trained Ingersoll-Rand sales engineers the technical meaning of NPSH is taken into account every time a pump selection is made. Many other factors including the piping system, current conditions, friction, specific gravity of the liquid, viscosity, etc., are evaluated. And, because we do a most thorough selection job we like to think of NPSH as "NO PUMP SELECTED HAPHAZARDLY." This leads to customer satisfaction, something we are proud of.

When you're having a pumping problem, why not call on an Ingersoll-Rand pump specialist. There's one as close as your nearest Ingersoll-Rand branch office or authorized I-R pump distributor. Perhaps the pump you need will fall within our extensive commercial pump line.

Cradle-mounted pumps 1/3 through 100 horsepower. Capacities to 3200 gpm—heads to 525 feet. Also self-priming models.





Horizontally-split pumps 1½ through 400 horsepower. Capacities to 4000 gpm—heads to 1100 feet.



OTHER PUMPS TO 200,000 GPM-PRESSURES TO 6500 PSIG.

For More Facts Write No. 222 on Information Card-Last Page

Products

Flexible Tapping Machine Cuts Tap Breakage



A hand tapping machine especially designed for adaptability and complete freedom of action will tap perfect threads quickly. Operator can instantly swing the tap to any point on the table or even beyond the table. Floating arm glides the tap into true hole center without pushing or tugging, and counterbalanced column is raised or lowered instantly and effortlessly. Machine requires less tapping torque, reduces thread lead distortion, produces straight tapped holes and eliminates tap breakage. Toolroom Equipment Div., Products Machine Co., 990 Housatonic Ave., Bridgeport 1, Conn.

Write No. 35 on Information Card-Last Page

Insert Toolholder Has Only Three Parts



A new toolholder design represents an important advance in disposable carbide tooling. The basic principle involves a cam action lock. Insert is engaged by (Please turn to page 130)

BETTER STAINLESS WELDS WITH ARCOS



Arcos produces a full line of stainless filler metals...coated electrodes, bare electrode wire, consumable inserts, bonded fluxes. This across-the-board selection of filler metals, plus Arcos stainless welding know-how, assures you of the selection of the right filler metal for the most economical arc-welding process—manual, semi-automatic or automatic. Where you use Arcos stainless filler metals you build up the quality of your welds and push down your welding costs.



Arcos Corporation • 1500 S. 50th St. • Philadelphia 43, Pa.

"On the waterfront...

it's 8:22 p.m. . . . the ship is loaded . . . sailing time is dawn tomorrow. We loaded 2,200 tons of cargo in her hold today, starting at sun-up. Tomorrow there'll be another ship . . . another day of lifting, hauling, storing.

"When you work like that from day to day, you need a truck that can stand the gaff . . . you need a truck that can handle the load with ease and put it where you want it—fast. You need a Clark to work with."



Industrial Truck Division

CLARK EQUIPMENT COMPANY

Battle Creek, Michigan



For full details, see your local Clark Dealer or circle 77 on reader service card

NEW Stap-on



MAGNETIC SOCKETS last ten times longer — give re-usable magnet bonus

On actual customer test, this newly developed socket drove 112,320 self-tapping screws. A similar competitive socket, priced only about 30 cents less, wore out after driving only 10,530 screws. Both sockets were subjected to identical conditions.

Figure what you can save by switching to these new Snap-on sockets — in replacement cost — and in assembly line downtime, too.

and here's an Extra Bonus . . . re-use your magnets — save up to 50 %

In addition to far greater life, this socket is available without the magnet. You simply tap or press the magnet out of the worn-out socket — insert it in the new one. You save 50 percent on the cost of a complete magnet socket. Snap-on has developed an inexpensive tool that inserts the magnet to exactly the right depth.

This is an example of *Snap-on* research and development that helps industry save time and money. Your *Snap-on* industrial tool specialist can show you many more. Branch offices and warehouses are conveniently located in 58 major cities throughout the U.S. and Canada.



To remove magnet, simply tap it out of the socket with an appropriate punch.



To re-insert, just tap magnet into socket with Snap-on assembly punch. The entire operation takes about a minute.

SNAP-ON TOOLS

FOR ALL INDUSTRY

8019-H 28th AVENUE . KENOSHA, WISCONSIN

For More Facts Write No. 225 on Information Card-Last Page

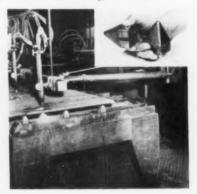
Products

(Continued from page 127)

an eccentric on the central cam pin, thus providing a positive lock that cannot be loosened by vibration or pressure of the cut. As locking is inside rather than outside, there are no protruding screws or clamps to break. With only three parts, tool is simple, compact, and has such high holding power that insert will break before it will loosen. Lower-cost tool comes in 15 styles and 124 sizes for triangular and square in-Metallurgical Products Dept., General Electric Co., Detroit 32. Mich.

Write No. 36 on Information Card-Last Page

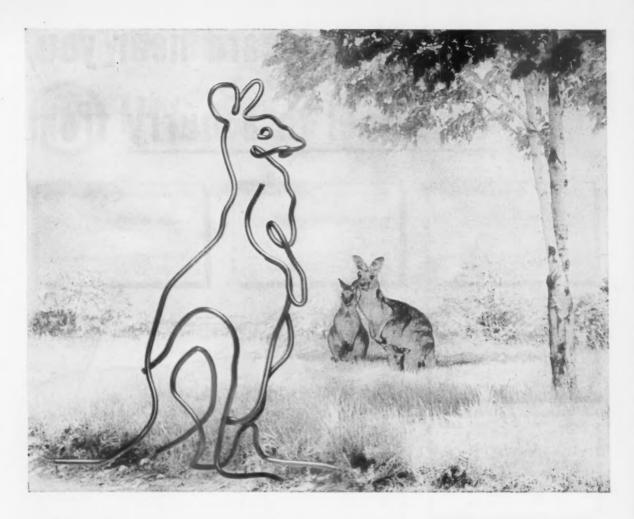
Rising Blocks Protect Flame Cutting Tables



Cast-iron rising blocks which fit onto cross supports of any flame cutting table hold steel plate clear of table and prevent flame from cutting and damaging table bed. Costly maintenance of cross supports is practically eliminated. Bee-hive shaped blocks may be arranged according to pattern of cut in seconds, giving firmer and more uniform working surface. Blocks prevent distortion, hold heavy plate or thin sections, prevent "fall-away" and reduce blow back. They come in two standard slot sizes, 5/16 and 3/8 in., and specials can be made for any application. Foundry Sales, Brown and Sharpe Mfg. Co., 235 Promenade St., Providence, R. I.

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FOR READER SERVICE CARD TURN TO LAST PAGE

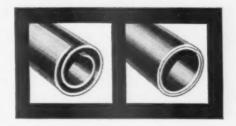


Bundy can mass-fabricate practically anything

Whether you need straight lengths of tubing, coils, or complex fabricated tubing components, you'll find Bundy the reliable source. You'll get delivery on time and at low unit cost with

Bundy's mass-fabrication economies. Bundy's tubing specialists are ready to help you with engineering and design problems, too. Long recognized as the best small-diameter tubing, Bundyweld® has steel's greater

strength and higher fatigue resistance. And it meets Govt. Spec. MIL-T-3520, Type III; ASTM 254; and SAE specifications. Call, wire, or write: Bundy Tubing Company, Detroit 14, Michigan.



Bundyweld, double-walled from a single copper-plated steel strip, is metallurgically bonded through 360° of wall contact. It is lightweight, uniformly smooth and easily fabricated . . . has remarkably high bursting and fatigue strengths. Sizes up to 5%" O.D.

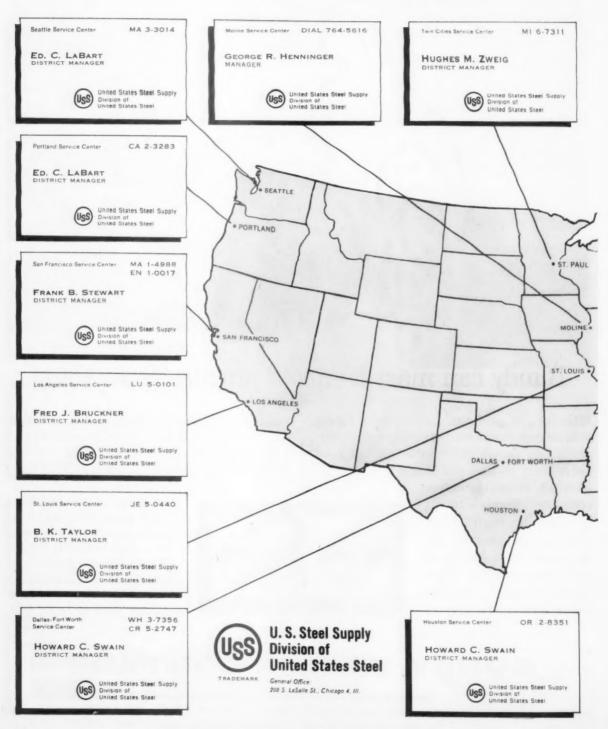
BUNDY TUBING COMPANY

DETROIT 14, MICH. . WINCHESTER, KY. . HOMETOWN, PA.

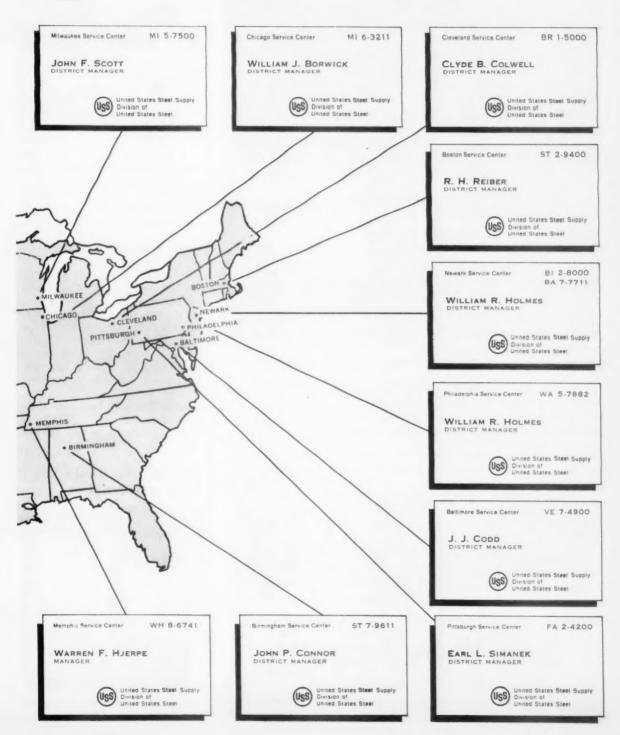
WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING. AFFILIATED PLANTS IN AUSTRALIA, BRAZIL, ENGLAND, FRANCE, GERMANY, ITALY, JAPAN.

For More Facts Write No. 226 on Information Card-Last Page

Pick a card near you, any steel in a hurry from



and you can get (USS) U. S. Steel Supply





666. Jomac work glove. Reversible-any two make a pair. Men's knitwrist.

It's GLOVEMANSHIP that makes JOMACS

your best buy in industrial work gloves

GLOVEMANSHIP is an art. It involves combining the ideal yarns, processing the cloth by techniques which will impart the wearing and protective qualities desired, creating patterns, styling cuffs and, finally, producing the finished gloves with real craftsmanship. Jomac practices GLOVEMANSHIP.

What does GLOVEMANSHIP mean to you? It means lower glove costs with quality gloves that afford maximum dexterity, more comfort; that resists oils, greases and stains; that protect hands and forearms against such hazards as cuts, burns, bruises and abrasions; that can be washed time after time.



For better fit, greater dexterity, more comfort, longer wear, and maximum safety in handling most chemicals, oils, greases, etc. — specify North PVC Coated Gloves.

To keep workers dry and comfortable in foul weather and to give them superior protection against chemicals, oils and greases—specify North PVC Protective Clothing.



Write for more information about Jomac industrial work gloves today.

JOMAC

Jomac Inc., Dept. F Phila. 38, Pa.

In Canada: James North Canada Company, Ltd., Simcoe, Ont.

"Jomac Sells Quality . . . and Quality Sells Jomac!"

For More Facts Write No. 227 on Information Card-Last Page

Products

Conveyor System Uses Electro-Magnetic Concept



A system to control automatic conveyor routing operates on a non-contacting, electro-magnetic principle without any moving parts. It is highly effective in sorting and routing of letters and packages and of products and materials in manufacturing, processing, broken lot order assembly and loading operations. Controls use non-wearing magnetic circuits for automatic sorting and routing of containers, hampers or tote trays to any desired number of destinations. System is operable through wide conveyor speed range from 20 to 300 ft. per min. Completely transistorized system stresses reliability of operation. Atronic Products, Inc., West Conshohocken, Pa.

Write No. 38 on Information Card-Last Page

Polyethylene Tanks Are Light and Tough



Tanks molded of Eastman's tough Tenite polyethylene make

Products

unusually practical containers or vessels for storage, plating, compounding, pickling or mixing operations. Lightweight and virtually indestructible containers are made in a variety of shapes and capacity sizes from 5 to 500 gals. Absence of seams, welds and joints in the one-piece units eliminates leakage and cuts cleaning problems. Tanks can be fitted with spigots, valves, or hose connectors. They are particularly useful in plants dealing with foods, photographic and other chemicals, paints and pharmaceuticals. Delaware Barrel & Drum Co., Inc., Wilmington 99, Del.

Write No. 39 on Information Card-Last Page

Material Mixer Cuts Time in Half

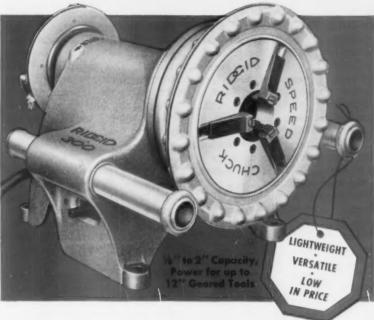


A mixer for materials in 55 gal. drums weighing up to 1000 lbs. is guaranteed to cut present mixing time in half. Developed particularly for the paint industry, unit's patented rotary oscillating motion has been successfully tested on sound deadener, glazing compound, abrasives, plastics and other difficult materials. Paint that formerly required five hours with paddle mixer can now be done in 20-30 minutes. Material is mixed in original container with no need to remove cover. Once 220/440 volt, 3 phase, 60 cycle electrical connections are made, machine is ready for oneman operation. National Industries, 1178 Lewis St., Jackson,

Write No. 40 on Information Card-Last Page

Power for Your Shop or on the Job ... New

300 Power Drive



Bench, stand or truck mounted, this compact REDID 300 Power Drive quickly pays for itself in time and labor savings. Speed chuck closes and releases by hand ... holds tight forward or reverse. Cam-action rear workholder holds even long lengths straight for perfect threads and cuts every time.

Converts to Low-Cost Threading Machine

Add the PRIDITO No. 310 Carriage, No. 360 Cutter and a PRIDITO Quick-Opening Machine Die Head, and you're ready to cut, thread and ream. With a No. 19 Nipple Chuck you even cut and thread close nipples with threading machine speed and ease.



DRIVES GEARED THREADERS . THREADS CLOSE NIPPLES

Call your Distributor today. For your convenience, he maintains a complete stock of RI⊠ID Work-Saver Pipe Tools and parts!



For More Facts Write No. 228 on Information Card-Last Page

Expanding Your Office? ... Try Leasing Furnishings

WHILE THE leasing of plant equipment is nothing new, the leasing of office furnishings—desks, chairs, carpet, draperies—has recently emerged as a specialized, rapidly-growing field.

According to one leasing firm, Contract Interiors for Business, a division of Kriloffice, Inc. about 12% of the companies that acquire new office furnishings do so on a lease basis. By 1966, this figure is expected to double.

Purchasing agents may find leasing particularly desirable when faced with remodeling or expansion. The advantages of leasing include:

 A better furnishings job than might be possible by purchasing outright.

• Complete flexibility in choosing furnishings.

• Furnishings brought in with little or no capital required.

Since leasing involves a minimum cash outlay, companies that lease can buy a better grade of furniture. The entire office will reflect a higher standard and more attractive decor. Many leasing companies provide top-grade designers to assist in the furnishing job.

Any Shape, Any Size

The lease can include everything in the office, from desks and chairs to ashtrays, letter openers, pictures and typewriters. There need not be a restriction in the style, shape, or materials used. If custom furniture is desired, it can be leased.

One company recently expanded its engineering department and simply leased drafting tables and chairs for the new space. Another moved into a new factory building and leased over

\$13,000 worth of furnishings—including carpeting, draperies, desks, sofas, chairs, and lamps. Office machines, such as mimeograph machines, calculators and adding machines, can also be included in the lease.

The purchasing agent usually has a choice of a one-, two-, or three-year lease period. At the end of the period, the following options are available:

A) Re-negotiate the lease at a reduced rate and retain the same furnishings.

B) Purchase the furniture outright.

C) Continue the lease at the same rates and obtain entirely new furnishings.

D) Terminate the lease and return the furnishings.

Any office can be furnished on a lease basis just as tastefully as the imagination will permit.

Leased Office F	ment as	Office	Volume of Leased Office Furnishings		
a Percentage of Total		and Equi	and Equipment Sales		
Sales.	46	1956	Millions		
1956	2 lı	1957	\$18.3 36.6 64.1		
1957		1958			
1958	7	1959	82.4		
1959	9	1960	109.0		
1960	12	1961	128.0(est.		



"...what a pleasure it is to open one of your boxes"

writes Mrs. Flora Moccia, Ecorse, Michigan, in an unsolicited letter

Jo whom It may loneurn;

I'me heen meaning to write a long time ago. I'm always so huey but their time I'm going to make time.

I just wanted to say what a new pleasure it is to open one I your hope of Joger. It so lasy, when I have to open a large bof of Jope like that I nevally dreak it. But your bofer are always a pleasure.

Thank you for heing so thoughthe.

Mrs. Flass Maria



Busy people like Mrs. Moccia open a Graphicopy E-Z Paper Pak* Carton with one quick pull. No broken nails. No bruised fingers. Then the handy E-Z Carry Pak* lifts out easily. No digging. Most important, these Hammermill Graphicopy Papers are ready to run—and run right. Call your Hammermill supplier today and please your ladies. Hammermill Paper Company, East Lake Road, Erie 6, Pa.



*Patent Pending

For More Facts Write No. 229 on Information Card-Last Page

designability

the fourth dimension



Peerless

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Unruh and Hasbrook Avenues
Philadelphia 11
Pennsylvania

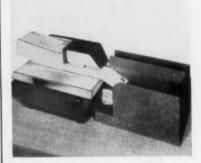
For More Facts Write No. 230 on Information Card-Last Page

Office Equipment



Two newly-designed punches have been introduced by Acco Products, Ogdensburg, N. Y. The significant difference between the two models is that one has a 21-sheet capacity, and the other punches up to 36 sheets at one time. A feature of the new unit is the lock-down facility of the handle for storage in desk drawers.

Write No. 41 on Information Card-Last Page



Complete redesign of its automatic envelope opener has been announced by Martin Yale, Inc., 2100 W. Fulton St., Chicago 12, Ill. The new machine will open envelopes at the rate of 400 per minute. Envelopes are set against the back ledge of the feeding table and the machine starts. The opener cuts off the smallest possible trim and produces a clean straight trim the full width of the envelope.

Write No. 42 on Information Card-Last Page

A 12-page booklet has been released which describes the copying system of Gevaert Company of America, Inc., 321 West 54th

(Please turn to page 142)



A OLD WAY

See how a VERTI-FILE installation can save you up to 56% in floor space? You start saving the moment you install one.

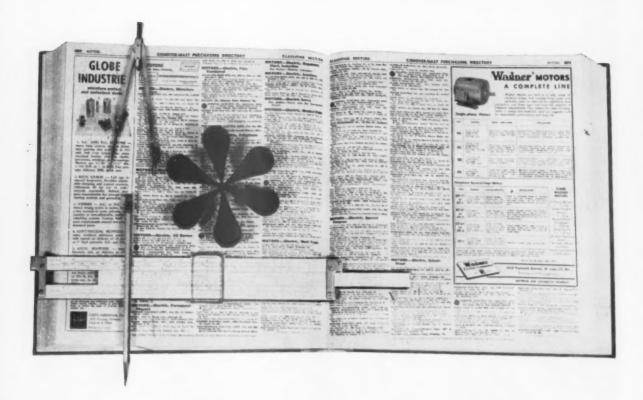
CUT FILING COSTS IN HALF WITH VERTI-FILE

You can actually save up to 50% in equipment costs when you convert from conventional drawer filing to the vertical shelf concept perfected by Royal's DeLuxe Verti-file* system. This is because Verti-file cabinets cost no more but hold twice as much. Savings in floor space, too, run as high as 58% because Verti-file substantially reduces required aisle width by eliminating space-consuming drawers. This advanced idea in record-keeping makes filing up to 35% faster, easier, more accurate. DeLuxe Verti-files by Royal bring you all the advantages of open-shelf filing, including maximum visibility, ease of access and entry, fully adjustable shelving, and "security-lock" doors if desired. DeLuxe's exclusive "Equalizer" feature insures easy opening of Verti-file doors wherever pressure is applied. Steel construction and baked enamel finish give

VERTI-FILE units the quality appearance of fine office furniture. And there is no need to buy new folders or change your existing system. Write today for complete information to DeLuxe Metal Products Division, Royal Metal Manufacturing Company, Dept 10-H, One Park Avenue, New York 16, New York.

Royal DELUXE DIVISION

*T.M. REG. U.S. PAT. OFF.



*Value Analysis Starts Here

Good suppliers are the foundation of any value analysis program. Conover-Mast Purchasing Directory gives you a reliable list of manufacturers of industrial products. It gives you:

the company name,
address,
telephone number,
size of company,
and necessary technical data.

Next time you use a directory, use CMPD.



Conover-Mast Purchasing Directory

> 205 E. 42nd St. New York 17, N. Y. MU 9-3250



MERCY HOSPITAL of Laredo



LAREDO, TEXAS

Ass't Administra of Mercy Hospit Laredo, Texas

"NCR PAPER

saves us its entire annual cost . . . every six months."

-MERCY HOSPITAL, Laredo, Texas

"In 1955, we changed to complete machine accounting, using patients' statement-ledger forms with carbons.

"We wasted valuable time re-inserting and removing carbons when we had to make additional postings on the forms. Also, the carbon stubs often caused our files to become 'hilly' and many times it was difficult to locate accounts in the files.

"We decided to try NCR Paper (No Carbon Required). At first, we felt the extra cost of the paper could not be justified. But we soon found NCR Paper more than repays its extra cost in savings of time and effort. "NCR Paper originals and copies are picked up as a complete unit. Copies are always clean and legible. We no longer have to waste time inserting or removing any carbons.

"We feel NCR Paper is one of the 'success stories' of the twentieth century. It has enabled us to save its entire annual cost every six months through time savings and increased operating efficiency."

wast

Asst. Administrator Mercy Hospital of Laredo

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio 1039 OFFICES IN 121 COUNTRIES • 77 YEARS OF HELPING BUSINESS SAVE MONEY

It's the cost-in-use rather than the purchase price that determines the true cost of your multiple-copy forms. Invest in NCR Paper forms and get dividends through time saved and increased record-keeping efficiency for your business.

NCR PAPER ELIMINATES CARBON PAPER



- and today, they still make the best that money can buy



For More Facts Write No. 233 on Information Card—Last Page

Office Equipment

(Continued from page 138)

Street, New York 19, N. Y. The booklet outlines the various fields where a copying system is used and also describes the range of papers and their characteristics. Write No. 43 on Information Card—Lost Page



A facsimile communications system for transmission of graphic data was introduced recently by Fairchild Camera and Instrument Corp., 580 Midland Avenue, Yonkers, N. Y. The basic system consists of a flat-bed scanner-transmitter and a recorder. Both units are transistorized and use printed circuitry. Transmision speed of the unit is almost two linear inches per minute, but twice this speed can be obtained by using microwave or telephone program channels.

Write No. 44 on Information Card-Last Page



Mechanical improvements have been added to style changes in a new line of folding chairs introduced recently by Brewer-Titchener Corp., Cortland, N. Y. Both seat and back and shaped identically. When the chair is folded for storage, both upholstery surfaces are protected by a steel wall comprised of the seat and back panels. The rear legs are positioned so that when they touch the baseboard no other part of the chair touches the wall.

Write No. 45 on Information Cord—Lost Page



Desk-top electric postage meter mailing machine was introduced by Pitney Bowes, Inc., Stamford, Conn. It seals, stamps and stacks letter mail in one operation or provides gummed meter stamps for packages and bulky envelopes. The new machine will imprint up to \$9.99½ in one stamp. A detachable envelope feeder is available to convert the unit to a fully automatic machine.

Write No. 46 on Information Card-Last Page



A portable dictation unit has been introduced by International Business Machines Corp., 545 Madison Ave., New York 22, N. Y. The new unit is powered by flashlight batteries and is compatible with the company's magnetic belt office products. A small microphone is used for individual or conference recording and playback. The portable may also be used as a transcription unit.

Write No. 47 on Information Card-Last Page



Bostitch staplers have increased office efficiency so much that the boss thinks they're the most valuable tools in the office.

Call your Bostitch Economy Man. He's listed in the Yellow Pages.

Fasten it better and faster with

BOSTITCH®

728 BRIGGS DRIVE, EAST GREENWICH, RHODE ISLAND

pick a plant.

INGING PL

EATON RAPIDS, INCH

SHIETON PA.



Fast service is no gamble when you deal with Union-Camp. Fourteen corrugated box plants are strategically located to supply all your corrugated packaging needs. Customized local service is combined with a comprehensive packaging evaluation program designed to assist you in specifications analysis, structural design, box testing, materials handling and graphic design.

Important reasons why more and more companies are turning to Union-Camp for creative help in packaging.



UNION-CAMP.

CORRUGATED BOXES
Union Bag-Camp Paper Corporation 233 Broadway N.Y. 7. N.Y

Dianta

*Dedham, Mass.; Allied Container Corp., Route 128, Allied Drive Trenton, New Jersey; 1400 E. State St. †Washington, Penna.; P. O. Box 285 †Cleveland, Ohio; 10200 Miles Ave. †Sharonville, Ohio; P. O. Box 86 Chicago, Ill.; 4545 West Palmer †Benton Harbor, Mich.; 11th St. & Britain Ave. †Monroe, Mich.; 1109 East Elm Ave. †Eaton Rapids, Mich.; P. O. Box B *Baltimore, Md.; Eastern Box Co.; Wagner's Point

o; 10200 Miles Ave.
hio; P. O. Box 86
545 West Palmer
r, Mich.;
Britain Ave.

*Subsidiary Companies

'Jamestown, N. C.;
3704 Point Pleasant Rd.*
Spartanburg, S. C.; P. O. Box 1965
Savannah, Georgia; P. O. Box 570
Lakeland, Florida; P. O. Box 454

For More Facts Write No. 235 on Information Card-Last Page

Eighth District Sponsors Advanced Purchasing Workshop



Twenty-two purchasing agents attended three-day course held in conjunction with Clarkson College, Potsdam, N. Y.



Robert H. Wilson (r.), Chas. Pfizer & Co., receives his Certificate of Proficiency from Dean F. Gordon Linsey, director of Clarkson's summer program. Wilson was elected president of the class.



Professor Rawdon (I.) of Clarkson describes the "inventory control game" developed by his business administration department. It is used to demonstrate the effectiveness of basic decisions in minimizing total purchase costs.

Dr. Howard T. Lewis (r.), instructor at the workshop cosponsored by the N.A.P.A., goes over some fine points with W. J. Heubach (l.), Union Bag-Camp Paper Corp., and Victor Pooler, Carrier Corp.

TO IMPROVE YOUR PRODUCTS... COUNT ON NICKEL STAINLESS STEELS TO INCREASE YOUR PROFITS... COUNT ON STEEL SERVICE CENTERS



HERE'S HOW Stainless Steels can improve your products: they provide...

- · high mechanical properties
- · excellent resistance to corrosives
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- · wide variety of attractive finishes
- · ready availability in many forms
- · consistent response to heat-treatment



HERE'S HOW Steel Service Centers can increase your profits: they eliminate these costs of steel possession...

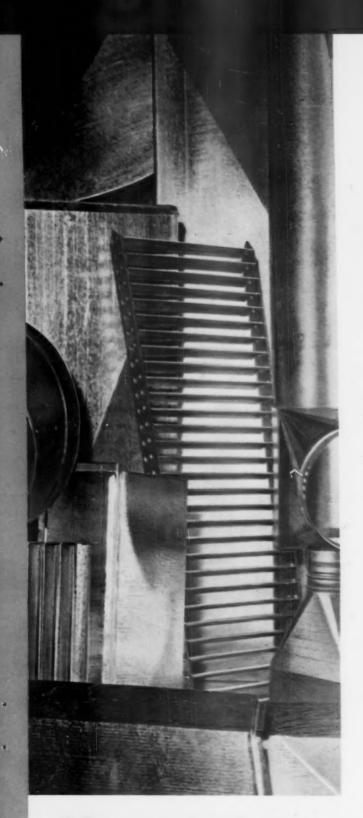
- · labor and handling
- · capital invested in inventories
- · scrap and wastage
- obsolescence
- · insurance, taxes, and accounting
- storage space
- · equipment for handling, cutting, burning

Your nearby Steel Service Center can give you more information on fast delivery and low cost dependable service. Why not call today?

THE INTERNATIONAL NICKEL COMPANY, INC.
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makes stainless steel perform better longer





tufkote

New high quality
Youngstown galvanized sheet
from the industry's newest,
finest mill

A new 848-foot long continuous Sendzimir galvanizing line is rolling at Youngstown's giant Indiana Harbor Works. It is the most modern line in the world. Every month it produces 11,000 tons of **tufkote**, shiny new Youngstown galvanized sheet steel in coils, cut lengths; flat or corrugated.

Youngstown **tufkote** gives you a full range of coatings with absolute adherence. You get superior corrosion resistance, better appearance. You get better workability, better forming properties of both zinc coating and base metals. Test it, bend it, draw it, cut it, crimp it. Youngstown **tufkote** offers you the best combination of strength and workability—is unequaled in superior properties.

Get the exact coating, finish and adherence your specifications call for. Specify Youngstown tufkote. And count on fast delivery. Like over 800 other Youngstown steel products, new tufkote is Youngstown-made from ore to steel to mill to final cut sheet and coil. You can depend on quality and service when you order steel from Youngstown.



Youngstown - growing force in steel

Forfull details on Youngstown tufkote galvanized sheet, write: Dept.10-C The Youngstown Sheet and Tube Company, Youngstown, Ohio



Russ Stark, N.A.P.A. president: "The buyer's ethical attitude in negotiating with vendors must be above reproach."

Association News

N A P.A. Officials Attend Florida **Purchasing Seminar**

K USSELL T. STARK, president of the National Association of Purchasing Agents, and other high-ranking N.A.P.A. officials were among the featured speakers at the third-quarter meeting of the Purchasing Agents Association of Florida. Traditionally, this meeting is a three-day seminar.

President Stark spoke on "Professionalism in Negotiation." He told the Florida group that negotiation is a dynamic buying technique which supplements, but does not replace, competitive buying. "When properly used," Stark declared, "contract negotiation can achieve major cost reduc-

His talk climaxed a full-day of top-level discussion which included a keynote address by John W. Bush, Interstate Commerce Commissioner, who came from Washington, D. C. for the meet-

Tom Adams, Secretary of State of Florida, gave a presentation on local conditions. His talk covered "Florida Business Cycles and Trends and Their Effect On The Purchasing Agent."

Association includes many from Cape Canaveral, Patrick Air Force Base, and other government installations in the area. They particularly appreciated the address by George Udell of the Atomic Energy Commission's Supply Division on "Economics of Industrial Purchasing As Applied to Government Procurement."

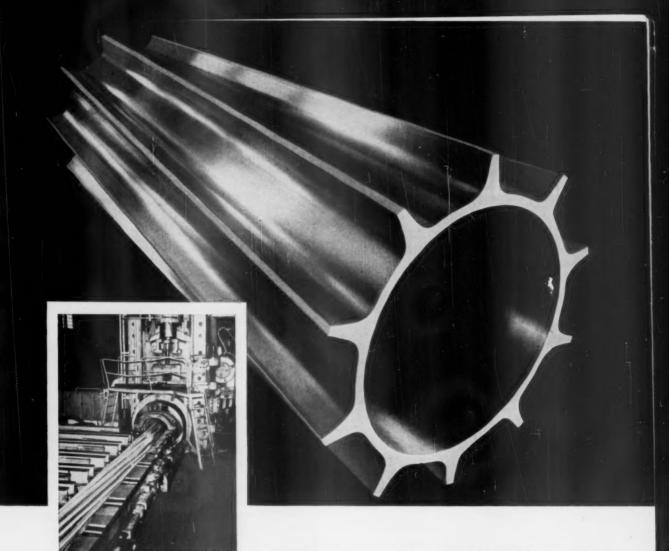
N.A.P.A. officials at the conference included Paisley Boney (immediate former president), chairman of the national public relations committee; M. B. Eubanks, Jr., vice president of District Seven; Marshall G. Edwards, recently-appointed staff member at N.A.P.A. headquarters, and W. L. Beckham, chairman of the District Seven public relations committee.

The N.A.P.A. president also told the Florida purchasing agents that "the buyer's ethical attitude in negotiating must be above re-

(Plase turn to page 153)

Paisley Boney, former president of N.A.P.A., spoke on "The P.A.'s Public Relations Responsibility" at The membership of the Florida a seminar sponsored by the Florida Association.





NEW TWIST IN EXTRUDING ALUMINUM...

giant press produces 48-foot rotor with spiral vanes, eliminates welding This big aluminum rotor is extruded with spiralled, integral vanes on a 13,200-ton press at Dow's Madison (Illinois) Plant. Substituting this extrusion for a weldment in Salina Manufacturing Company's "Blendvane" feeders not only cut production time and costs, but improved the unit's feeding action!

Using extruded rotors, Salina has eliminated the time and cost of welding on straight bar stock vanes. Spiral-vane design (not practical with welded vanes) produces a more even feed of the material being transferred.

IF YOU USE EXTRUSIONS, or weldments, it may be possible to extrude a better, lower-cost part than you are now using. Dow's experience and full range of extrusion equipment—including presses ranging from 1700 to 13,200 ton capacity—combine to produce parts in a variety of alloys and designs.

Conventional shapes, unusual shapes . . . see Dow for both. You'll find a combination of extrusion quality and economy that can make your profit picture brighter. For more information, write the dow metal products company, Midland, Michigan, Merchandising Department 1115EE8-28.



THE DOW METAL PRODUCTS COMPANY

Division of The Dow Chemical Company

BASIC for Purchasing Agents

Purchasing agents searching for a single source for a wide variety of products are sure to find the value of these American-Standard Controls Division products. This is true of anyone who must control or indicate the pressure or temperature of gases and fluids or electrical energy.

D. T. Williams Valves



D. T. Williams value valves are bronze for superior corrosion resistance. For many years they have been called "Guardians of the Pipelines"; available in gate, globe, hose, angle, check and quick-opening models, with a variety of seat types and materials.



Industrial Thermometers



Rochester bimetal industrial dial thermometers provide extreme accuracy, are hermetically sealed and can be externally calibrated. Available in standard dial sizes from 1" to 5", and with scale ranges from minus 150°F to 1000°F.



You can get detailed information on any of these products by writing American-Standard Controls Division, 5900 Trumbull, Detroit 8, Michigan.

Pressure Gauges



Rochester pressure gauges have a multi-wound helical coil and are unmatched for extensive cycling and continued accuracy under extreme conditions. Friction and hysteresis is below readable limits. Available in 2", 3" and 5" dials. Ranges to 10,000 psi.





Association News

(Continued from page 150)

proach. It doesn't take long for a supplier to learn the character of the party with whom he is dealing." An attitude of fair play will make the vendor much more cooperative, he noted.

"On the other hand." President Stark said, "the buyer must know as much about the potential sup-



M. B. Eubanks of Riegel Textile Corp., recently-elected vice president of District Seven, studies a report of district plans which he outlined for N.A.P.A. members

plier as possible-how he operates, his attitude, and his ethics. The more that is known, the less chance for trouble during the life of the contract. I believe if more time was spent on source selection, the problems which are apt to arise from negotiations would be kept to a minimum."

The Burroughs Corp. executive also hammered away at the need for purchasing executives to conduct themselves like professionals You don't become a "real pro" just because you occupy the chair of the purchasing agent, he counseled. He said a professional P.A. should be:

• Courageous. The P.A. must have the courage to make decisions. There are many decisions to be made before signing of a negotiated contract. Lack of courage for this task can often be traced to lack of knowledge.

 Willing to stick his neck out -intelligently. As the P.A. makes decisions to accomplish his objectives, he must take certain calculated risks. To take the sure route all the time may involve delays which cannot be justified or tolerated.

• Able to maintain a sound working relationship with people. Many purchasing agents can communicate easily in their own jargon but cannot get ideas across to anyone unfamiliar with the terminology. Professional competence demands this gap be bridged.

• A master craftsman. A purchasing agent should work at all parts of the procurement job. He should always be searching for improvement, always doing the very best he can, and always striving for professional compe-

Among the other highlights of the seminar was a panel discussion on "Purchasing Problems" with Ken Cruise of Bendix Corp. serving as moderator. Members of the panel were Ralph Siller, Florida State Purchasing Commission; Russ B. Wallworth, Electronic Communications, Inc.; and G. Sparks, J. G. Christopher Co.



K. A. Cruise, Bendix Corp., served as moderator for the discussion on "Purchasing Problems."

Joseph J. Mate, General Electric Co., was general chairman of the highly successful 9th annual conference. Plans are already underway for next year's meeting.

Installation of new officers for

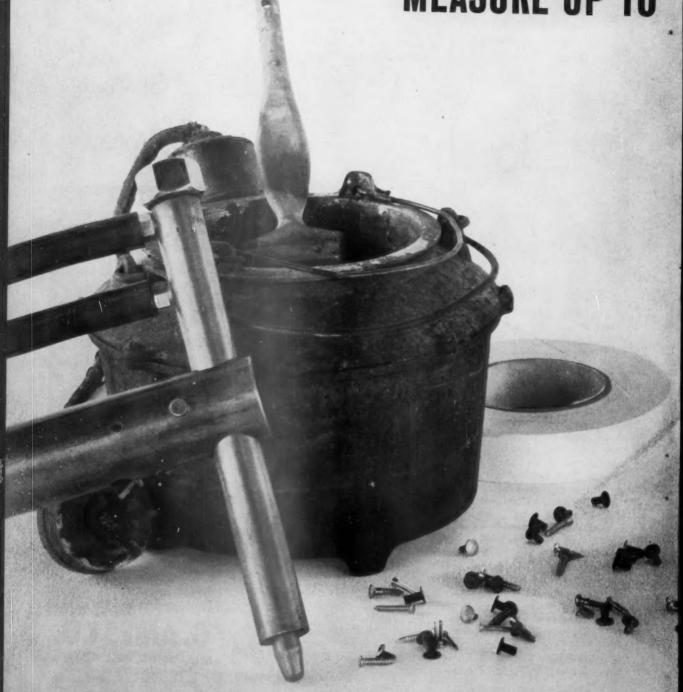
(Please turn to page 156)



PARKERSBURG, WEST VIRGINIA For More Facts Write No. 239 on Information Card-Last Page

DO YOUR FASTENING METHODS

MEASURE UP TO



THIS ONE?

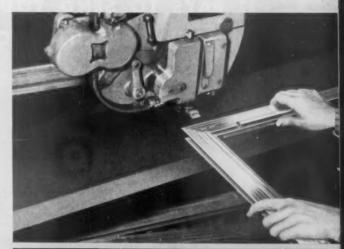
We've yet to uncover a fastener that matches the cost-cutting talents of Acme Steel Wire Stitching

Are your present fastening methods producing with lowest material cost, fastest operating speed, highest quality workmanship? Investigate Acme Steel Wire Stitching... to be sure.

This method promotes such substantial savings, it is outmoding conventional stapling, riveting, spot welding, threaded fastening and adhesion methods in a host of assembly operations.

A high speed Acme Steel Wire Stitcher takes wire directly from a coil—cuts it... forms it into proper size "staples"... then drives thousands of them without a pause for reloading. Result: pre-punching, tapping, drilling, hole aligning and screwdriving steps are completely eliminated. You can join many combinations of metallic or non-metallic materials with uniformly high fastening strength and speed. Material and manpower savings are tremendous.

Naturally, wire stitching is no cure-all for every industrial assembly job. But, an objective analysis by men who know will tell if this advanced method is feasible in your operation. Ask your local Acme Idea Man for recommendations. Or, send samples of materials you wish fastened to: Wire Stitching Laboratory, Acme Steel Company, Dept. PMCP-81, 135th Street & Perry Avenue, Chicago 27, Illinois.





WIRE STITCHING'S TALENTS EXTEND TO MANY FIELDS

Acme Steel Wire Stitchers are closing and reinforcing corrugated boxes
and containers of every variety...binding books and literature...bagging,
carding and labeling packages.



STITCHING

FITCHING FRAMING STRAPPING

Association News

(Continued from page 153)

the Florida Association took place at the banquet. Ralph H. Griffith, Jr., heads the group as president for the 1961-62 term. First and second vice presidents are Ralph R. Siller and Peter A. LoBianco, respectively.

C. J. Hernod was installed as secretary, Paul R. Cornwall, as treasurer, and Robert P. Raitt, as national director. Directors of the Association are G. Q. Bulter, A. C. Dobay, William Finger, James B. Hoon, S. L. Jackson, Joseph J. Mate, H. L. Mick, and Mary C. Smith.

Purchasing Seminar Slated For Petroleum Industry

The Purchasing Agents Association of Tulsa and the University of Tulsa are planning a Petroleum Industry Purchasing

Management Seminar. The three-day event will be held at West-ern Hills Lodge, just outside of Tulsa, on October 18, 19 and 20.

Leading authorities from industry and education will explore the role of the purchasing executive in production, marketing, and finance in the oil and gas industry.

The registration fee of \$150 includes private room, refreshments, meals, and transportation between Tulsa and the Lodge. Enrollment for the seminar is limited to 35.

Further details can be obtained from E. J. Murray, executive secretary, Purchasing Agents Association of Tulsa, 1202 Atlas Life Bldg., Tulsa 3, Oklahoma.

Central Iowa Elects New Officers

Officers for the 1961-62 year were elected and installed recently by the Central Iowa Association of Purchasing Agents.

President of the Association is D.E. Balvin. W.F. Langefeld and George Mosher will serve as first and second vice presidents, respectively.

Other officers include: Carl Davis, secretary; Warren Gerstenkorn, treasurer, and A. W. Rempp, national director.

Dallas Elects Officers For 1961-1962

The new president of the Dallas Association of Purchasing Agents is Ray Langford, Sun Oil Co. Elected to serve with Langford were C. M. Newsom, Southern Union Gas, first vice president; Robert Crane, Dresser Industries, second vice president; Fred D. Bradley, Southern Union Gas, secretary-treasurer; Harold Stockton, Dallas Power & Light Co., national director; and Paul Talley, Mobil Oil Co., alternate national director.

The membership chairman introduced four new members at a recent meeting of the Association. Then were: Burton Denman, Geotechnical Corp., Thomas J. McCartin, Dresser Electronics; and Robert Pullen and William Rogers of Engineering Supply Co.



ERIE BOLTS • STUDS • CAP SCREWS • NUTS In Alloys • Stainless • Carbon • Bronze

All the economies inherent in specialized production backed by experienced craftsmanship are yours when you send your fastener specifications to Erie. For almost half a century, our sole business has been the production of fasteners to customer, government or national standards . . . fasteners to meet the rigors of extreme temperatures, corrosion, tensiles, fatigue, impact, sheer stresses . . . fasteners for railroads, refineries, diesels, farm and earth moving equipment and other heavy machinery. Send your specifications to us for prompt estimate.



ERIE BOLT & NUT CO. Erie, Pennsylvania

Representatives in Principal Cities

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If you use brass or copper oval seamless tubing in any of the popular sizes, it will pay you to investigate the modern tube forming facilities at H & H. Because no dies are required,

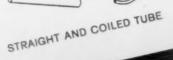
speeds delivery - even in small quantities. So why wait? Widths range from .500 to .750, metal thicknesses from .010 to .025. As always, you can count on H & H to provide the exact temper and grain size you want.

HAH TUBE AND MANUFACTURING CO. 271 North Forman Avenue, Detroit 17, Michigan . Offices from Coast to Coast the H & H way saves you money,











SEAMLESS

LOCKSEAM COIL STRIP



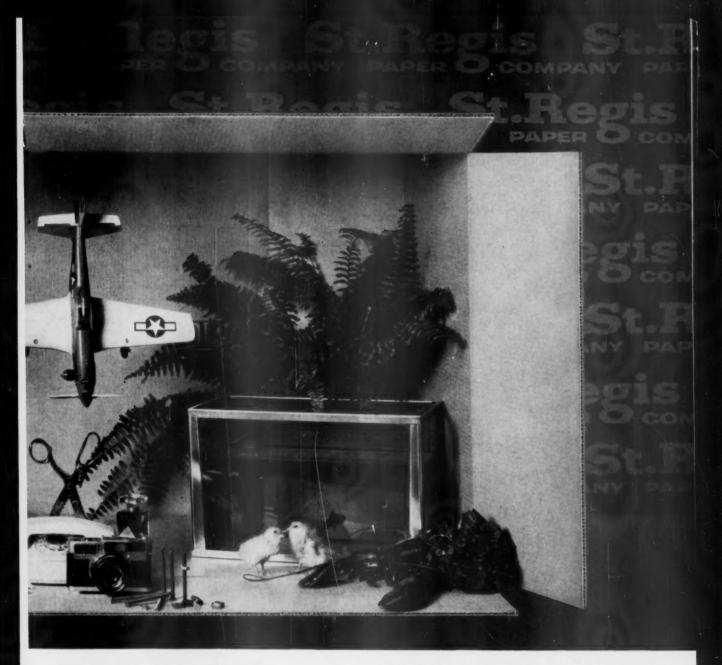
BIG THINGS...LITTLE

These, and a thousand other things, have found the perfect way to go traveling—comfortably safe in a St. Regis® container. In fact, there's hardly anything you can name for which St. Regis can't design the right corrugated box.

And, if you think we have designs on your product—you're right! We make it our business to ask for new op-

portunities to design boxes that give your product greatest protection at lowest cost. You may need "difficult" boxes... boxes with full printing... convertible to display units... or boxes that weather the weather. If the box you need doesn't exist, we'll create and test it. And it will be the sturdiest, safest box your product ever traveled in.

ANYTHING GOES...IN A



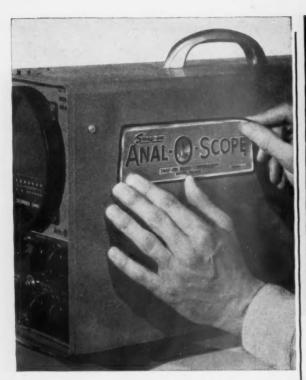
THINGS...LIVE THINGS

You can step into this imaginative world of protective packaging at any of our nation-wide plants. Each has a staff of creative design engineers, modern production techniques, and years of experience in virtually any industry you can name. Corrugated boxes for big things, little things—anything—are designed and made at these St. Regis plants:

Birmingham, Ala. • Fullerton, Calif. • Salinas, Calif. • Jacksonville, Fla. • Atlanta, Ga. • Chicago, Ill. • Dubuque, Ia. • Hagerstown, Md. Minneapolis, Minn. • Jersey City, N.J. • Buffalo, N.Y. • Albany, N.Y. Canton, O. • Cleveland, O. • Coshocton, O. • Newark, O. • Crafton, Pa. • Mt. Wolf, Pa. • Pittsburgh, Pa. • Dallas, Texas • Garland, Texas Houston, Texas • Tacoma, Wash. • Grafton, W.Va. • Milwaukee, Wis. Or write: Container Div., St. Regis Paper Company, 150 E. 42 St., N.Y. 17, N.Y.

ST. REGIS CONTAINER

For More Facts Write No. 243 on Information Card-Last Page



Fasson Self-Adhesive Nameplates Improve Appearance, Last Longer...

Silk-screened and embossed on Fasson's gleaming, metallized Mylar*-Vinyl, this Snap-on Tool nameplate won't tarnish, resists scratches and wipes free of grease and oil easily.

"The new Fasson nameplate is much more attractive than the original paper-base nameplate, even though the original was produced in two colors, whereas the Fasson material is produced only in black on silver," says George A. Smith, Advertising Manager of Snap-on Tools Corporation.

Fasson's many nameplate and decorative trim materials cost much less than metal nameplates, and go on in seconds without screws, clips or messy glues . . . because they're self-adhesive.

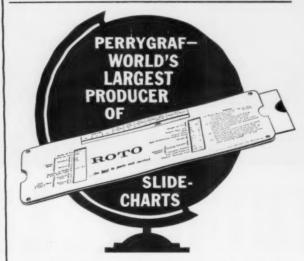
*Mylar is a DuPont Polyester Film

Send for free samples and literature



An Avery Company
Dept. E, 250 Chester Street, Painesville, Ohio
Makers of self-adhesive papers • foils • films • for converters
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160





Two hundred million since 1932! More Slide-Charts for more people than any other company in the world.

Two Modern Plants, one geared to runs of millions, the other to hundreds. Finest facilities for accurate printing and assembly. Deliveries as high (in a pinch) as a million per week. Prices consistent with quality work and dependent on quantity and materials from pennies to dollars.

We invite your inquiry. Send for free full color booklet including 122 actual case histories.



product facts at the fingertips

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PURCHASING

BOSTON QUALITY ... OPTIMOUNT ADAPTABILITY

largest selection of standard models from stock simplifies design for speed reduction economy



Helical geared Ratiomotors and Reductors – single or double reduction.

For 1/6 to 15 HP drives. Horizontal or vertical base mounted, or shaft mounted.

680 mounting combinations from stock – meet any in-line need.

Furnished ready to install, by local Distributors.

Specify OPTIMOUNT. Save extra cost of special gearhead motors.

Save design time. See Catalog 57 for complete listings.

IN STOCK at your nearby DISTRIBUTOR





■ Industrial plastic stock shapes come in all sizes and forms and, unfortunately, in varying *quality* too.

When the plastics you buy carry the identifiable trademark or brand of a recognized quality producer, you're not gambling with end-product performance and your company's reputation.

When you specify Polymer nylon, Teflon*, or other stock shapes, the POLYPENCO® brand on each is your

assurance of consistent high quality ... quality that means core-to-surface uniformity so necessary for end-product reliability and efficient, waste-saving production.

Branded POLYPENCO industrial plastics are available in the widest range of shapes and sizes you can get anywhere from over 100 stock locations throughout the world. Insist on the POLYPENCO brand when you buy!

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Engineered Industrial Plastics

NYLONS • TFE-FLUOROCARBONS • OTHER PREMIUM PLASTICS

For More Facts Write No. 248 on Information Card-Last Page

Association News

New England Assn. Holds Election



Stuart H. Flanders, Maxim Motor Co., was elected president of the New England Purchasing Agents Association at the recent annual meeting. Elected to serve with Mr. Flanders were: Walter F. Kopke, Plymouth Cordage Co., vice president; Herbert A. Hamilton, Sperry Rand Research Center, treasurer; and William C. Kendrick, H. P. Hood & Sons Inc., national director.

Connecticut P.A.'s Elect Officers



Maxwell D. Coe, director of purchases at Stanley Works was recently elected president of the Purchasing Agents Association of Connecticut. Other officers elected were: first vice president, James E. Steele, United Illuminating Co.; second vice president, James E. Gibbons, R. T. Vanderbilt Co.; national director, Ezra J. Kihlgren, Emhart Mfg. Co.; and secretary-treasurer, Fred A. Harvey.

1961: Tighter Squeeze on Profits Proceduting, however, seemed to the most significant factor in the

Here is the 1961 outlook for sales, profits, selling prices, wages and materials costs as rebosted ph metalmarking execu-mades and materials cases as i.e. tives in 20 industries. industry by industry report

begin on p. 127. Sales: Overall Trend Is . Most metalworking exect replying to this survey loo Profits Will Probably Drop

While the sale of construction machinery will be slightly higher this year, profits should drop.

Price cutting, foreign competition, and increased costs hurt the industry in 1960. Also, construction work was below annonse to the survey reveals a de-

Profit Potential Is Doubtful

What Worries Executives Most

of electric or look for e e de-

and me.

of profits during 1961. An IRON AGE survey reveals that 40 pct of the respondents think profits will go up. However, 45 pet look for a drop and 15 pct say that profits will rem

try expects sales crease this year. those responding t for sales to climb.

y will decrease. ly note, will pre ent levels.

te situation of dackening profi ad labor and ma 90 pet say lab

ment worries are lower profits, increasing costs, and greater competition. But, despite some disappoint.

High on the list of manage-

ment about this year's sales executives are still conf about the future.

. What are businessmen worried about?

According to a recent their principal concerns are Rising costs, lower profit r mestic and foreign.

The study was made at

foreign c deeply aff pet ment them to M

Cost-Price Squeeze Will Stay

*prosperity with a problem" or "the economic climate of a developing

depression is hardly favorable to

Why Profit Pinch Will Continue

Earnings dip in the first half increasing competitic was not solely due to the business slowdown.

It reflects a long-term profit

dropped to 52.3 pct by 1959. But other items increased. Wages, salaries, and labor benefits rose from 23 pet to 27 pet. Taxes took 6.4 pet

turing industries for the years 1940, 1957, and 1958

Profit rates dropped for 15 of

"But in later ost permit wider dustries. . . As duction declines. their newer facile older and less Sometimes the able an industry lume to raise efz labor cost."

Materi

Help?

Try your local service center, if you buy steel in small or moderate lots. That's where the cost of steel (processed or not) is often less than the final cost of steel you buy from a mill and keep in inventory.

Consider your "costs of possession"-rent, insurance, interest on capital, accounting, handling, wastage, taxes, and a few others. These are costs your service center can help you reduce or completely eliminate. Talk it over today.

Service centers from coast to coast stock top-quality Bethlehem structurals, sheets, plates, bars, tool steels, and alloy steels. And deliver them fast.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

BETHLEHEM STÉEL



For Strength ... Economy ... Versatility

For More Facts Write No. 249 on Information Card-Last Page



EASY DOES IT ... and it's easy to do with CFal-Wickwire Swing Sling. Here, workmen at the Norton Company in Worcester,

Massachusetts provide finger-tip control while transporting a 12-ton pulpstone to further finishing operations.

How Norton Company babies 12-ton pulpstones in a 30-foot Swing Sling* cradle

"Our customers are entitled to receive the product they buy in perfect condition," says Lester Knapp, foreman of the pulpstone assembly operation at Norton. When the product is a 12-ton pulpstone for the paper industry, carrying it with care is no easy matter. That's why Mr. Knapp is an enthusiastic booster of CF&I-Wickwire's Swing

"Because of the neoprene covering over the wire strands," reports Mr. Knapp, "there is no possibility of damaging the surface. Swing Slings have simplified and increased the efficiency

of our materials handling system every step of the way."

Mr. Knapp is not alone in his praise for the Swing Sling. An ever-increasing number of men concerned with materials handling are finding that the Swing Sling is the long awaited answer to their problem. Swing Sling's exclusive neoprene blocks grip the load gently, lift it firmly . . . without damage to even the most easily-marred surfaces.

There's sure to be a Swing Sling to meet your specific requirements. For complete details, contact your CF&I-Wickwire sales office or distributor.

*Trademark-Patent Pending

The Colorado Fuel and Iron Corporation Denver · Oakland · New York Sales Offices in Key Cities



Association News

Speakers Named For Eighth District Conference

Prominent speakers will be on the program at the Eighth District Conference to be held in Newark on October 26 and 27. Among them is J. Joseph Fogarty, procurement officer for the State of Rhode Island. Mr. Fogarty, who is also vice president of District 9, will talk about the various aspects of government buying.

Another speaker, Douglas Smith of General Electric Company, will speak on "Evaluating Vendor Performance." He is currently serving as chairman of the National Association of Purchasing Agents' committee on standards for vendor evaluation.

A two-and-one-half-hour workshop devoted to data processing will be led by William Meyer, Westinghouse Electric Corp. Meyer is chairman of the data processing subcommittee of the N. A. P. A. professional development committee.

Old Dominion Meeting Was Outstanding Success

P. A.'s who recently attended the summer meeting of the Old Dominion Purchasing Agents Association were high in their praise for the top-notch speakers featured on the two-day program.

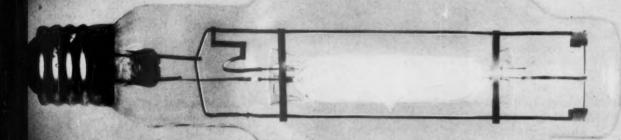
G. Lloyd Nunnally, Department of Purchases & Supply of the Commonwealth of Virginia and president of the Association, outlined the theme of the meeting when he said, "Great things will be accomplished if we don't care who receives the credit."

Leasing was given considerable attention by the P. A.'s. Vincent J. Barry, American Industrial Leasing Co., discussed "Why Management Should Adopt A Leasing Program." Later on the program, I. O. Perkins, Andrews, Burket and Co., covered "The Financial and Accounting Aspects of Leasing."

Dalton A. Cook, Mayflower Hotel and newly elected vice president for District 5, presented

(Please turn to page 166)

YOU'RE LIGHT YEARS AHEAD WITH WESTINGHOUSE



NEW DESIGN GIVES 25% MORE LIGHT

NEW WESTINGHOUSE "LIFEGUARD" MERCURY LAMPS...

Give you the most light per dollar . . . because a new Westinghouse electrode virtually eliminates arc-tube blackening . . . major cause of mercury lamp deterioration! As a result, new Lifeguard lamps are rated at a full 12,000 hours economical service life, and give up to 25% more light throughout their 70% longer life.

Lifeguard lamps (available in 100 to 1000 watts) are made of Weather Duty^T hard glass for extra dependable service indoors, or out. They will not crack or craze when exposed to rain, sleet, snow, thermal shock, or corrosive industrial gases.

The Lifeguard lamp is just one of the many types of

Westinghouse lamps designed to save you money. Take advantage of the Westinghouse Lighting Cost Reduction Plan and cut your lighting costs in one or more of the following ways: (1) Reduced cost of lamp purchases; (2) Reduced lamp replacement labor costs; (3) Increased lighting level for the same or lower power costs; (4) More efficient use of power. For complete information, call your Westinghouse Lamp Agent...or your nearest Westinghouse Sales Office. You can be sure...if it's Westinghouse.

Westinghouse



Westinghouse Lamp Division, Westinghouse Electric Corporation, Bloomfield 2, N.J.

For More Facts Write No. 251 on Information Card-Last Page

Association News

(Continued from page 164)

"N. A. P. A. On The Move."

"Managerial Economics For The Purchasing Officer" was the topic of E. V. Bowden, department of economics at William and Mary College.

Other officers who will serve this year with Mr. Nunnally are James R. Woody, Federal Reserve Bank of Richmond, first vice president; George F. Baylor, Smith's Transportation Corp., second vice president; Lyman L. Peters, Williamsburg Restoration Inc., secretary; and David D. Armistead, Lynchburg National Bank & Trust Co., treasurer.

4th District Conference Set For October 12 and 13

A two-day conference for purchasing agents in the Fourth District has been scheduled for October 12 and 13 at the Pick-Fort Shelby Hotel in Detroit.

Workshops, which form a large part of the program, include "Who Should Stock—User or Supplier," "Buying Something Under \$5.00," "Leasing versus Buying," and "How Should Purchasing Agents Look At Today's Prices."

Among the guest speakers will

be Paul V. Farrell, editor of PURCHASING Magazine, and G. W. Howard Ahl, secretary-treasurer of the National Association of Purchasing Agents.

Michigan Group Elects Officers



Grand Rapids officers, standing (l. to r.) are: Ward Heath, vice president, and William Smith, secretary. Seated are John VanderVeen, president, and Homer Barber, national director.

NEW Franklin standard motors of LIGHTWEIGHT aluminum



So light...

YOU CAN ALMOST MAIL THEM!

New Franklin integrals are light! Save more than 15 pounds shipping cost on each Franklin 5 hp single phase motor mounted on your equipment. Less worker fatigue, too. Quicker work, lower cost of production. See these lightweight, work horse motors! And write Department P-8 for free brochure.



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Pocket Size

• All-Steel Construction

For "blind"—and for many nonblind applications—here is the answer to low-cost, quick assembly. "SNAPO Automatic Deluxe" is jam-proof because of automatic ejection of the mandrel nail after the unique rivet is set. Eliminates many welding jobs, replaces sheet metal screws, bolts and nuts, gets into confined areas. Rivets absolutely will not vibrate loose, heads countersunk for easy finishing. Write today!

The Finest "Blind"
Rivet Gun Made
We invite you to
compare, and you'll
agree that this is
the most durable,
highest quality,
easiest-to-use
"Blind" rivet gun
made. Save time
and money on fastening, repair jobs.

RICHLINE CO., INC. 1531 E. Franklin Ave. Minneapolis 4, Minn.

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Widest Range from Any Distributor Source. Calling on your local Alcoa distributor for aluminum in all its forms is like having an Alcoa plant next door. Nobody else stocks as much sheet and plate; wire, rod and bar; tube and pipe; and extruded shapes in as many sizes, alloys and finishes. Nobody else can respond as quickly to your call for metal or technical advice.

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ARIZONA

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Berkeley 10
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(Thornwall 1-1820)
Los Angeles 59
Benjamin Metals Company
(Nevada 6.0

(Rod & Bar)
Los Angeles 54 Metals & Supply Co Los Angeles 22 Pacific Metals Co (Raymond 3-5431) Los Angeles 22

Tubesales (Tube & Pipe) (Raymond 3-7781)

(Raymond 3-7781) San Diego Ducommun Metals & Supply Co. (Gridley 7-3141) San Diego 1 Pacific Metals Company Ltd. (Belmont 4-3253) San Francisco 7 Pacific Metals Company, Ltd. (Underhill 3-5600)

COLORADO Denver 16 Marsh Steel & Aluminum Co. (Keystone 4-1241) Denver 16 Metal Goods Corporation (Dudley 8-4141)

CONNECTICUT Milford Edgcomb Steel of New England, Inc.

inity 4-1631) Windsor Whitehead Metals, Inc. (Murdock 8-4921)

FLORIDA Jacksonville 5 The J. M. Tull Metal & Supply Co., Inc. (Evergreen 7-5561) Miami

The J. M. Tull Metal & Supply Co., Inc. (Oxford 6-0155) **Tampa 10** The J. M. Tull Metal & Supply Co., Inc.

GEORGIA

Atlanta 2 The J. M. Tull Metal & Supply Co., Inc. Jackson 5-3871)

Aluminum Products Hawaii, Ltd. (94-861) IDAHO

loise Pacific Metal Company III I IMOIS LLINUTS
thicage 80
lentral Steel and Wire Company
Republic 7-3000)

Chicago 80 rey Steel Company p 2-3000) Chicago 23 Steel Sales Corporation (Bishop 7-7700)

Indianapolis 18 Steel Sales Co. of Indiana, Inc. (Liberty 6-1535)

Wichita Marsh Steel & Aluminum Co. (Whitehall 2-3231) KENTUCKY

Williams and Company, incorporated (Juniper 3-7781)

LOUISIANA New Orleans 12 Metal Goods Corporation (Jackson 2-7373)

Baltimere 7 Whitehead Metais, Inc. (Windsor 4-2000) MASSACHUSETTS

Cambridge 39 Whitehead Metals, Inc. (Trowbridge 6-4680)

Roxbury Eastern Metal Mill Products Company Eastern Metal Mill I (Highlands 2-5900)

MICHIGAN Detroit 12 Central Steel and Wire Company (Twinbrook 2-3200) Detroit (Hazel Park) (Jordan 6-3902) Detroit 10 Steel Sales Co. of Michigan (Tyler 6-3000)

MINNESOTA Minneapolis 13 Steel Sales Co. of Minnesota (Sterling 1-4893)

MISSOURI

orth Kansas City 16 (Grand 1-3505) North Kansas City 16 Metal Goods Corporation (Harrison 7-1234) St. Louis 10 Steel Sales Co. of Missouri, Inc. (Prospect 1-5255)

NEW HAMPSHIRE Nashua Edgcomb Steel of New England, Inc (Tuxedo 3-7731)

NEW JERSEY NEW JERSE: Elizabeth Adam Metal Supply of New Jersey (Flanders 1-2550) Englewood Tubesales (Tube & Pipe) (Lowell 7-4400)

Harrison Whitehead Metals, Inc. (Humbolt 5-5900) Hillside 5

Division of Robert Campbell Co., Inc. (Waverly 6-6000) NEW YORK

Albany 1 Eastern Metals Warehouse, Inc. (IV 9-3281) **Buffalo 17** Brace-Mueller-Huntley, Inc. (TR 7-8700) Buffalo Whitehood Metals, Inc.

ad Metals, Inc. New York (Long Island City 1) New York (Brooklyn)

7000) (Browning 2-) New York 14 Whitehead Metals, Inc. (Watkins 4-1500) Rochester 5 Adam Metal Supply of Rochester

Adam Metal Supply of Roche (Locust 2-4260) Pachester 1 Brace-Mueller-Huntley, Inc. (Congress 6-6560) Rochester 10 Whitehead Metals, Inc. (Butler 8-2141) Syracuse 1 Brace-Mueller-Huntley, Inc. (Howard 3-3341) Syracuse 1 Whitehead Metals, Inc. Whitehead Metals, Inc. (Howard 3-6241)

Greensboro Edgcomb Steel Company (Broadway 5-8421)

Central Steel and Wire Company (Avon 1-2230) Cincinnati 37

Williams and Company, Incorporated (Valley 1-5555) Cleveland 28 M. Cast (Axminster 2 Cleveland 14

Company, Incorporated Williams and Company, Incorporated (Utah 1-5000) Columbus 12 Williams and Company, Incorporated (Axminster 4-1623) Toledo 12

Williams and Company, Incorporated (Greenwood 5-8661)

OKLAHOMA Tulsa 13 Metal Guods Corporation (Temple 6-2561)

OREGON

PENNSYLVANIA hiladelphia 33 Philadelphia 40 Whitehead Metals, Inc. (Baldwin 9-2323) Pittsburgh #8 Williams and Company, Incorporated (Cedar I-8600)

RHODE ISLAND

VANDORMENARA

Statersville Edgcomb Steel of New England, Inc. (Poplar 7-0900) SOUTH CAROLINA

Greenville The J. M. Tull Metal & Supply Co., Inc. (Cedar 3-8366)

TENNESSEE Memphis 6 Metal Goods Corporation (Whitehall 8-3407) TEXAS

Dallas McCormick Steel Company (CH 7-3104) Dallas III Dallas #5
Metal Goods Corporation
(Fleetwood 1-3271)
Houston 1
McCormick Steel Company
(OR 2-5671)
Houston 1
Metal Goods Corporation
(Riverside 7-1110)

UTAH Salt Lake City 1 Metals Company, Ltd. WASHINGTON

Ducommun Metals & Supply Co. (Parkway 5-1500) Pacific Metal Company (Main 2-6925) Spokane 4
Pacific Metal Company
(Keystone 5-3681)

WISCONSIN Milwaukee 1 Central Steel and Wire Company (Humboldt 1-5000) Milwaukee 9 Steel Sales Co. of Wisconsin (Hilltop 2-2020)

Call The Aluminum Man . . . his stock's the most complete!

Your Alcoa distributor sales representative-The Aluminum Manmaintains a warehouse bulging with sheet and plate: tube and pipe: extruded shapes: wire, rod and bar. His stock represents the widest range of aluminum products available from any distributor source. He can arrange for them to be slit, sawed or sheared to your specifications-furnish technical advice you may need on alloy selection and fabrication techniques. He's your fastest supply line for aluminum in any form when you need it. Your nearest Alcoa distributor is listed on this page, so give him a call . . . soon. Aluminum Company of America, 846-V Alcoa Building, Pittsburgh 19, Pa.

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From Barden you get fast delivery of competitively priced, performance proved instrument ball bearings from .0469" bore to 4" O. D., including a full line of miniatures.

You get quick delivery of standard sizes and types —35% of ordered items shipped same day. Large stocks of completed bearings are on hand for immediate delivery. Finished parts are ready for assembly on short notice to meet your individual specifications.

For your special bearing requirements, experienced research and design engineers work with you to produce new bearings quickly in specialized prototype facilities at attractive prices.

You get personal, authoritative service from your Barden factory-trained sales engineer: quick quotations (more than 85% answered same day) and on-the-spot technical help if needed. His in-plant team, intimately familiar with your needs and

your orders, follows through at the factory for you.

Since 1942 major bearing users have relied on Barden Precision bearings for dependable performance in instruments, weapon systems, computers and other high quality equipment. West Coast customers use Barden's Los Angeles office for quotations, engineering service and quick delivery of most-in-demand sizes.

The high quality assurance level of Barden Precision bearings saves one user \$.20 per bearing by eliminating costly incoming inspection and related handling, washing and relubrication operations. Other Barden customers realize substantial savings in increased assembly yield resulting from lower rejection rates, reduced disassembly and less rework time.

When you order miniature, instrument, spindle or turbine bearings, let experience, performance, price, and delivery be your guide—buy Barden.

BARDEN

THE BARDEN CORPORATION, 239 Park Ave., Danbury, Conn. • Ploneer 3-9201 Western Office: 3850 Wilshire Blvd., Los Angeles 5, Calif. • DUnkirk 5-0034

For More Facts Write No. 255 on Information Card-Last Page

industry

The Master Electric Division of Reliance Electric and Engineering Company will move its operations to two new plants in Indiana. The move is aimed at improving productivity and speeding service to customers, and will be completed by early 1962.

A 210,000 sq. ft. plant in Columbus, Ind. will manufacture gearmotors, and a 160,000 sq. ft. plant in Madison will produce fractional horsepower and specialty motors.

Construction of a new \$100,000 plant by Bradshaw Steel and Forge Co. is underway in Pinson Valley, Birmingham, Ala.

As Alabama's first independent forging operation, the company is moving its entire facilities from Wainwright Shipyard at Panama City, Fla. The plant will utilize 25,000 square feet and ultimately employ about 60 persons. Both manufacturing and office facili-

ties will be located on the four-acre plot.

The new installation will manufacture steel pipe flanges for pipeline, chemical, food processing, paper mills, atomic energy plants, the heating and cooling industry and electrical generating plants. Bradshaw will also do job and custom forging work.

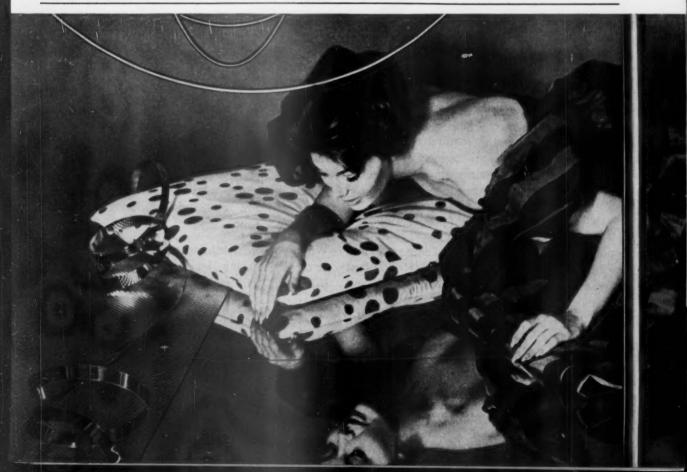
Filtors, Inc. Port Washington, N.Y., has purchased a 22-acre industrial site in Huntington, Long Island. Construction of a 61,700 sq. ft. single-story plant has begun and completion is expected early in 1962. The firm manufacturers hermetically sealed subminiature and microminiature relays used primarily in military and space electronic systems, including the Mercury Space Capsule.

A plant expansion and modernization program will be completed this month by **Taylor Fibre Co., Norristown, Pa.** It includes both the company's main plant at Betzwood, near Norristown, and its west coast plant at LaVerne, Calif.

The Betzwood plant is being furnished with expanded and improved facilities for the production of copper-clad laminates, additional floor space for the fabrication and assembly of engineered products, and a quality control center.

The LaVerne plant, which manufactures and fabricates parts from laminated plastics and vulcanized fibre, will use its new floor space chiefly for warehousing.

The Carborundum Company announces a \$1½ million modernization and expansion of its Globar Electronics Plant on Hyde Park Boulevard, Niagara Falls, N.Y. The project is part of the company's \$45 million 6-year capital expenditure program launched in 1958 to modernize and expand its facilities in the Niagara Falls area, and will further expand Carborundum's growing activities in the electronics and microwave fields.



Book Reviews

Administrative Strategy

By C. T. Hardwick and Bernard F. Landuyt

Simmons-Boardman Publishing Corp.

One of the co-authors of this book, Dr. Hardwick, is well known to many purchasing executives since he is a member of the National Association of Purchasing Agents and has actively participated in many Association activities. They may well be interested in his book although it is not specifically devoted to purchasing. As the title implies. Administrative Strategy is devoted to the strategic approach to administration. The approach is based on the assumption that the administrator makes decisions based on "what he knows or believes those with whom he deals are planning or doing." The author sees good administration as "proper action taken in the light of realism-the realism imposed

through the course taken, anticipated, or possible by the administrator's colleagues in the organization, by his associates outside, or, particularly, by his opposition anywhere."

The book consists of 15 chapters presented in about 500 pages. Topics discussed include mobilizing of followers, reconciliation of administration objectives, the power complex, stratagems in planning, communication, and democracy in administration. Case histories designed for role playing facilitate application of principles discussed in the basic text.

Perceptive Management and Supervision

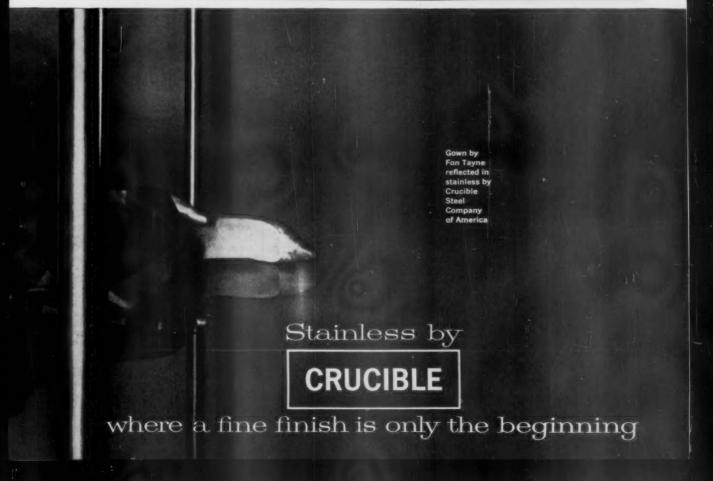
By Harry Hepner Prentice-Hall

\$10.00

In the preface of *Perceptive Management and Supervision*, the author says he has written the book for a "person who intends to advance to greater responsibili-

ties in business." The book is filled with common-sense suggestions on achieving this objective. It is primarily concerned with the problems in dealing with people in a business organization. The author explains group dynamics and teamwork. He takes a look at identification and status symbols. He discusses the corporate image, public relations, and the psychological climate in a company. He discusses the formal organization structure, the problems of both middle and top management, employment and human relations. He also provides tips on how the reader can improve his relations with other individuals and develop his social skills in business.

The book is reasonably easy to read and the author has deliberately avoided over-use of the specialized jargon of the psychologist or even that of the typical writer in the field of management. It is a worthwhile addition to the library of the purchasing executive interested in sharpening his management skills.



Purchasing People

Donald W. Harris has been named small business liaison officer for the Pratt & Whitney Aircraft division of United Aircraft Corporation, East Hartford, Conn. Mr. Harris has been associated with the company's small business program since its inception in 1956. He joined the aircraft engine firm in 1942 as company price control administrator and in 1944 was named a supervisor of general clerical groups in the purchasing department.

The small business liaison officer coordinates the company's procurement policies and procedures as they are affected by government regulations concerning small business, and works with suppliers to insure recognition and observance of the government regulations.

M. M. Markiewicz has been named manager of material control and purchasing for Motorola Inc., Semiconductor Products Division, Phoenix, Ariz. He will supervise purchasing and inventory control of production parts, equipment, and office supplies for the

Mr. Markiewicz joined Motorola in 1954 as an engineer for the



M. M. Markiewicz

Solid State Research Laboratory and held the position of general buying supervisor for that division from 1955 until joining the Semiconductor Products Division.

He attended Johns Hopkins

University while with the U.S. Navy and subsequently attended the Industrial Management Institute at Arizona State University in Tempe. He is a member of the Purchasing Agents Association and the American Society for Quality Control.

Mr. John R. Zwerle has been appointed manager, purchasing research and administrative analysis, for Mack Trucks, Inc., Plainfield, N. J. In this newlycreated position, Mr. Zwerle will be responsible for devising and implementing new and improved purchasing policies, procedures, and systems for use throughout the company.

Before joining the Mack organization, Mr. Zwerle had been senior purchasing administration analyst with the plumbing and heating division of the American Standard Corporation. Following his graduation from St. John's College, he received a Master's Degree in Business Administration from Columbia University.

(Please turn to page 176)

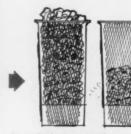
MOSINEE TURN-TOWLS

produce hidden cost savings





Less Storage Space One case of Turn-Towis goes as far as four cases of ordinary towels!



Less Maintenance Cost Turn-Towl cabinet control cuts towel consumption 50%!

Write for the name of your nearest distributor



BAY WEST PAPER CO.

1100 West Mason Street GREEN BAY • WISCONSIN Subsidiary of Mosinee Paper Mills Co.

Mop handle has built-in germ fighter



Custom molded by CMPC

APPLICATION: A one-piece, flexible mop handle with a built-in inhibitor of bacteria, odor causing germs and mildew. ADVANTAGES: Here was another challenge met squarely by CMPC . . . build-in a germ fighter as an important sales-building feature. Polypropylene and a proven-effective bacteria fighter were combined and injection molded in-to "Kleen-Puff" ® mop handles, Strong, yet lightweight and flexible—they offer healthful protection for a year and longer. Specify CMPC... custom plastic molders for over 40 years.

EMPC CHICAGO MOLDED PRODUCTS CORPORATION

1020-J N. KOLMAR AVE. CHICAGO 51, ILLINOIS For More Facts Write No. 258 on Information Card-Last Page

PURCHASING

when you design it, think how you'll pack it - call GAYLORD

A good time to save money on corrugated containers is at the product design stage. Get your design people and your nearby Gaylord Man together, to see whether minor modifications now can lead to major savings in packaging costs.

That's another advantage of Gaylord's nationwide network of plants: you have local package design service practically on your doorstep, wherever you are. What new product ideas are in your design department now? Is today the day to alert your Gaylord Man?



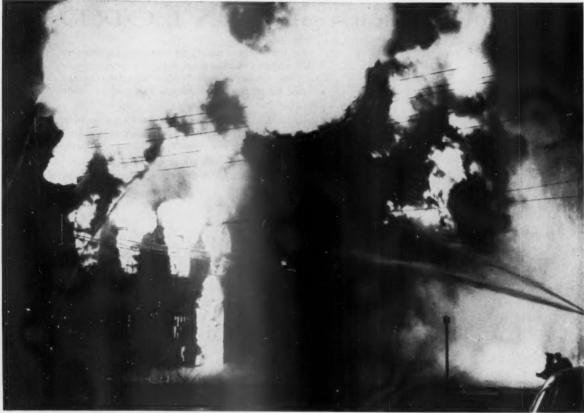




IN CANADA - CROWN ZELLERBACH CANADA LTD VANCOUVER B C HEADQUARTERS ST LOUIS PLANTS COAST TO COAST

For More Facts Write No. 259 on Information Card-Last Page

Gone Forever-\$1,000,000



Out of control, this four-alarm blaze completely destroyed an unsprinklered rubber warehouse. Result: a million dollar loss.

Proof that
Grinnell
Sprinklers
can protect you
against disaster
by fire



Grinnell Sprinklers went into action fast when fire broke out in U. S. Rubber plant. The fire was quickly checked and serious loss averted. Complete Grinnell systems are prefabricated—then

installed by expert crews. Grinnell Sprinklers save insurance dollars, too. For more information, write to Grinnell Company, Providence 1, Rhode Island. Sales Offices in principal cities.

GRINNELL

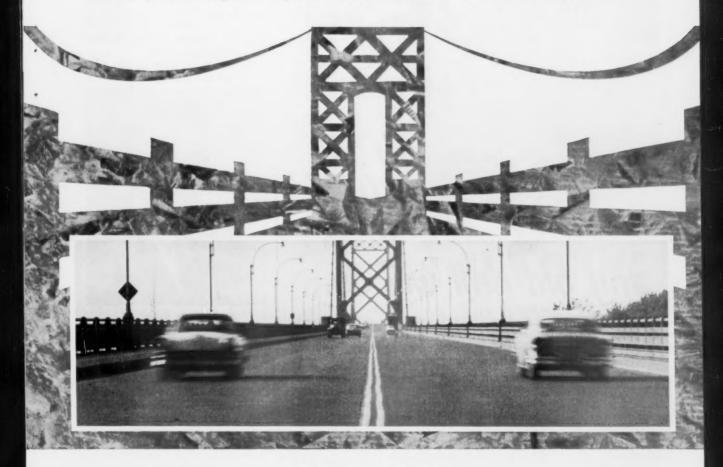




For More Facts Write No. 260 on Information Card-Last Page



Now, the strongest bridges are the fastest to build because they're . . .



GUARDED BY GALVANIZED STEEL

Galvanized steel sheeting—long used for permanent concrete forms in building construction—has now been adapted to do the same job for bridge engineers and with remarkable success.

On bridges and their approaches, a heavier gauge sheet is used with deepened corrugations for added strength. This new form assembly is not only strong enough to support heavy concrete slabs, but installation takes only half the time required by other types of form work.

The strength and excellent corrosion resistance of galvanized

steel is also winning increasing acceptance in a wide variety of architectural uses as well as in other areas of highway construction, such as culverts and guard rails.

WEIRKOTE® IN PARTICULAR is one galvanized steel that's especially well suited to all these applications. Made by the modern continuous process, it can be worked to the very limits of its steel base without losing even a chip of its zinc protection. Weirkote is made by two National Steel divisions: Weirton Steel and Midwest Steel. For further details, write to Weirton Steel Company, Weirton, West Virginia.



MIDWEST STEEL
Portage, Indiana

WEIRTON STEEL
Weirton, West Virginia



Divisions of

NATIONAL STEEL CORPORATION

For More Facts Write No. 261 on Information Card-Last Page



But, there are thousands of *other* applications that require the dependable precision of 'Buffalo' Drilling Machines. Take the No. 18 'Buffalo' Drills for example. They're fast, extremely rugged…designed to meet the precise demands of modern mass production.

In fact, there are 19 production models including floor, bench, and pedestal types in a variety of single and multi-spindle arrangements. All models have 3.906" diameter columns, 15/16" spindles, and 18" swing. Each can be furnished with hand, foot, or Bellows air feed. Long, perfectly balanced spindles are designed and machined to stay in alignment...maintain drilling accuracy. Exceptional frame strength resists deflection.

No. 18 'Buffalo' Drills are also available in special, automated, or rolling I-Beam suspension arrangements as well as hollow spindle units for high speed drilling of super-hard materials.

Contact your Machine Tool Distributor, or write Buffalo Forge for complete information on the full line of 'Buffalo' Drilling Machines.



MACHINE TOOL DIVISION

BUFFALO FORGE COMPANY

Buffalo, New York

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

'Buffalo' Air Handling Equipment to move, heat, cool, dehumidify and clean air and other gases.





"Buffalo" Machine Tools to drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.

'Buffalo' Centrifugal Pumps to handle most liquids and slurries under a variety of conditions.



Squier Machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.

For More Facts Write No. 262 on Information Card-Last Page

Purchasing People

(Continued from page 172)
He is a member of the National
Association of Purchasing Agents,
and of the Systems and Procedures Association.

Andrew J. McNeill has been appointed divisional purchasing agent for the Naugatuck Chemical division, United States Rubber Co., Naugatuck, Conn.

A native of Boston, Mr. Mc-Neill holds a bachelor of science



Andrew J. McNeill

degree in chemical engineering from Boston's Northeastern University. After completing his schooling he joined Naugatuck Chemical in 1947 as a production trainee. He was raised to production foreman, and subsequently assigned to the purchasing department in 1950.

The purchasing department of The Atlantic Refining Company, Philadelphia, Pa. has been streamlined by concentrating the buying responsibilities of six previous groups into four new divisions. F. N. Mann, manager of purchasing for Atlantic, announced the appointment of the following individuals to head the divisions: J. W. Brasko—Division #1; P. L. Rogers—Division #2; R. S. Yoder—Division #3; H. L. Kalbach—Division #4.

To assist outside firms, Atlantic is making available to its regular suppliers, and to others upon request, an index of over 2,000 different commodities and the respective Atlantic buyers who should be contacted on each item.

Changes in Air Cargo Make It a Much Better Deal

(Continued from page 87)

freight forwarders offer shippers such "custom" services as 24-hour pickup and delivery service and telegraphic notification of delivery, if requested by the shipper.

Air shippers are now being wooed with such extras as reserved air freight and deferred air freight. Reserved air freight allows a P.A. to "order" space ahead of time, and deferred air freight makes it possible to get sharply reduced air freight rates by sacrificing some of the speed of regular air cargo. As yet, all airlines do not offer both services.

Is Time Important?

The P.A. who checks air freight rates against surface transportation rates will still find air freight is higher. Whether it is too much higher depends on the circumstances. For example, the freight charges via rail on a 50 lb. shipment of electric motors from New York City to Chicago is \$4.00. This is the minimum rail charge for shipments weighing up to 100 pounds. The rate via air freight is \$6.00, which is the air freight minimum on shipments weighing up to 50 pounds. Pickup and delivery service is not included in either the rail or air rate. Service via rail takes five days. Service via air is overnight. The service specified in this case would depend on whether the four days were worth the two dollar difference.

In the final analysis the question of whether or not air cargo rates are "high" cannot be answered without a careful study of a company's distribution practices. Savings through inventory reduction, reduced packaging requirements, and lower loss and damage experience coupled with faster service to customers have caused many P.A.'s to re-examine their attitudes towards air cargo.

As air cargo capacity continues to increase, and as air cargo rates continue to come down, more PA's will include air cargo as an important part of their distribution pattern.



When it's air you want moved...or dust, heat, or fumes, 'Buffalo' fans produce results.

Their industry-wide reputation is based on a proved ability to move large volumes at highest efficiencies and lowest operating and maintenance costs. Take 'Buffalo' Belt-Air fans for instance. Available in 24" through 120" sizes, they can move 5000 to 250,000 cfm's (higher, if needed) at system resistances ranging from free delivery to ½" static pressure.

Performance is stable...sound levels, low. "Packaged units are shipped completely assembled (including motor and V-belt drives) for easy, lowest-cost installation. Typical 'Buffalo' design features rugged construction, wide range of motor sizes, and a variety of metals and optional equipment suited to specialized applications.

The Buffalo representative in your area has the latest word on air handling systems and equipment. Why not give him a call. Or, write Buffalo Forge direct.



AIR HANDLING DIVISION

BUFFALO FORGE COMPANY

Buffalo, New York

Canadian Blower & Forge Co., Ltd., Kitchener, Ontario

'Buffalo' Air Handling Equipment to move, heat, cool, dehumidify and clean air and other gases.





'Buffalo' Machine Tools to drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.

'Buffalo' Centrifugal Pumps to handle most liquids and slurries under a variety of conditions



Squier Machinery to process sugar cane, caffee and rice. Special processing machinery for chemicals.

For More Facts Write No. 263 on Information Card-Last Page



You're buying motors by the pound when price is the only consideration



Automated production lines multiply the cost of motor failure

Automated production lines can't afford motor drives selected on the basis of price alone. For when a group of machines are linked in series, with each dependent on the preceding machine to supply it, a motor failure in the line quickly multiplies the cost of downtime.

Wagner® totally-enclosed, fan-cooled Type EP and JP motors are perfect power packages for automated lines. They are completely protected against dust, abrasives, fumes, steel chips, or filings. Both ends of these motors have running shaft seals to keep their heavy-duty bearings clean. These Wagner motors will keep your pro-

duction rates up, delivering full rated horsepower under the toughest conditions... staying on the job with continuous service. They have earned their reputation for proven dependability.

Next time you buy motors, check beyond the purchase price. Make sure that you get all the performance you need—with motors that will do the job.

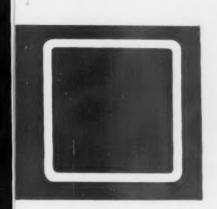
Wagner motors have been getting the job done for more than 65 years. Your Wagner Sales Engineer will be glad to show you why. Call him for an analysis of your next motor application, be it for plant or product.

Branches and Distributors in all Principal Cities

Wasner Electric Corporation

6360 PLYMOUTH AVENUE, ST. LOUIS 33, MISSOURI

For More Facts Write No. 264 on Information Card-Last Page



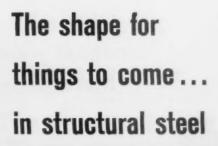


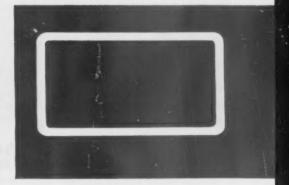
This mark tells you a product is made of modern, dependable Steel.

National Tube Division United States Steel Corporation 525 William Penn Place Pittsburgh 30, Pennsylvania

Please send me information about USS National Hot-Rolled Carbon Steel Hollow Structural Tubing.

Name		
Company	1	
Address		
City		
Zone	State	





Add low-cost USS National Hollow Structural Tubing to the list of available structural steel sections.

USS National Hollow Structural Tubing is made of hot-rolled carbon steel. This product has a tensile strength of up to 80,000 psi, and a minimum yield strength of 33,000 or 36,000 psi—maximum strength at minimum cost. It conforms to the chemical and mechanical properties of ASTM A-7 and A-36 specifications. Because of the hollow design, you obtain maximum strength with minimum weight. It's compact, easy to handle and maintain. It is a highly efficient structural member especially in compression and where subjected to bending moments in more than one direction.

USS National Hollow Structural Tubing comes in a wide range of stock sizes: 1" x 1" to 10" x 10" for squares, up to 32" perimeter for rectangles, and in lengths 36 to 42 feet. For more detailed technical information, send the coupon.

USS and National are registered trademarks

National Tube
Division of
United States Steel



"the neatest, cleanest washrooms are Marathon-equipped"



Marathon industrial towels have a soft feel. They are lint- and odor-free. With a correct size and fold for every dispenser and use requirement, washroom maintenance is greatly simplified. Attractive, efficient metal dispensers are designed to discourage waste and pilferage. Ask your Marathon paper merchant for details, and also about Service Roll or extra soft Dorsette tissue and the economical twin-roll dispenser that handles either.

marathon (**)

A Division of American Can Company MENASHA, WISCONSIN

Single-, multi- or C-fold towels, bleached or unbleached. Service Roll or Dorsette Facial Grade Tissue. Dispensers.

For More Facts Write No. 265 on Information Card-Last Page

Let SUN SHIP solve your machine problem

When you need machine work or specially built machinery of any kind, you'll find Sun Ship qualified to do the job exactly to your specifications. We have machine tools of every size, and the facilities and skills born of long experience.

When you have a machining problem, write or phone

SALES ENGINEERING DEPARTMENT

Sun

SHIPBUILDING & DRY DOCK COMPANY CHESTER, PA.

For More Facts Write No. 266 on Information Card-Last Page

Mechanization Leads to Materials Management

(Continued from page 82)
"balance" shipment is made, it is returned to the vendor immediately by the receiving department.

(3) Nonacceptable material is immediately returned to the vendor for credit. Accounting is authorized to back-bill by the machine-printed "Receiving Report" and an IBM adjustment card indicates the type of adjustment. The prepaid, f.o.b. delivered basis of all orders makes this procedure possible.

(4) A once-per-month payment date is negotiated with each vendor and the cash discount normally extended applies to this payment.

(5) Manual order typing of a seven-part purchase order form with "ditto" receiver insert for multiple distribution is eliminated. In its place, a five-part, half-size carbon insert machine-printed form is used for release of materials against open orders for distribution to vendors and to interested departments.

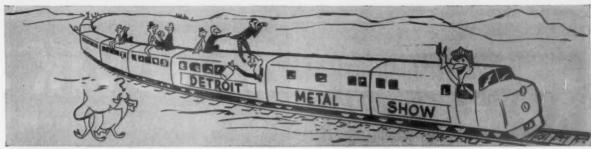
(6) Expediting is based upon a machine-printed "Expediting Report" that shows all information necessary to expedite, plus a column that shows the calculated overdue days for each item on order. The expediter can, therefore, expedite "by exception," rather than by the use of "tubs" and individual review of order files to determine which orders to check.

(7) More frequent and more extensive information about stock levels and stores activity is made available to management than was possible under a manual inventory control system. In fact, access to computer data is available when needed through the inquiry station. Periodic inventory reports include:

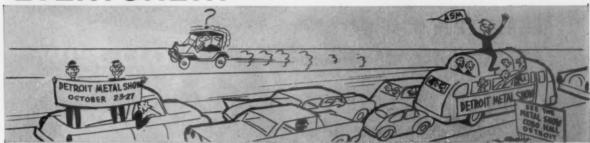
a. Storeroom Balance Report; b. Monthly Stores Past Activity

c. Perpetual Inventory Cards preprinted and distributed for daily sampling physical inventory checks.

(8) A "Vendor Performance Report" covering delivery, qual-(Please turn to page 184)



EVERYONE...



(Well, almost everyone)...





is headed for the 1961 DETROIT METAL SHOW

THE WORLD'S MOST COMPREHENSIVE METALS AND PROCESSING EVENT OCTOBER 23RD THROUGH 27TH • COBO HALL

Ideas . . . Ideas . . . Ideas . . . stimulating, thought-provoking ideas. How to improve production . . . how to cut costs . . . how to stay ahead of competition. SEE — hundreds of educational exhibits. HEAR — presentation of over 200 technical papers. EXAMINE — processing, inspection and control equipment. VISIT — the spectacular Materials Comparison Center. Yes, everyone . . . especially the IDEA man for his company . . . is headed for the 1961 Detroit Metal Show. He wants to KNOW more . . . DO YOU?



PLAN NOW TO ATTEND THIS GREAT SHOW!

ORGANIZE A COMPANY GROUP FOR TRAVEL AND ACCOMMODATION ECONOMY!

USE THIS CONVENIENT ADVANCE SHOW REGISTRATION FORM! You will receive your ASM INFORMA-Badge, your credit card guest permit to the show.

Advance Registration Manager, ASM Headquarters, I	Metals	Park, Ohio					
Gentlemen: Please register myself (and the names	of my	associates	listed	below)	for	the	forthcoming
METAL SHOW at Cobo Hall in Detroit.				Dagietr	otion	Can	for ASM

Title	Indicate Affiliated Organization*	Sessions and Exposition: \$2.00. (Except as noted below)
	Title	

(Enclose check or money order) TOTAL

Company ______ Address _____ Zone ____ State _____ ASM Members: NO REGISTRATION FEE for ASM Sessions and Exposition.

ASM Members: NO REGISTRATION FEE for ASM Sessions and Exposition.

AIME Members: \$5.00 Registration fee includes AIME sessions, ASM sessions and Exposition;

non-members: \$10.00 AIME sessions, ASM sessions and Exposition.

SNT Members: \$5.00 Registration fee includes SNT sessions, ASM sessions and Exposition;

non-members \$7.00 SNT sessions, ASM sessions and Exposition.

For More Facts Write No. 267 on Information Card-Last Page

FIND OUT WHY



FROM BORG-WARNER
ARE BETTER IN MORE WAYS
THAN ANY OTHER PLASTIC!





When you're considering plastic for your company's products, it will pay you to investigate CYCOLAC brand polymers, a unique type of ABS resin that combines three major advantages . . . toughness, hardness and rigidity. Many industry leaders have discovered that CYCOLAC resins help them achieve material and production economies while maintaining their high quality standards. Companies such as General Electric, Remington-Rand, Western Electric, Chrysler and Seward, to name a few, are using CYCOLAC ABS in appliances, typewriters, telephones, automotive applications and luggage with excellent results.

Find out why CYCOLAC is today successfully replacing metal and non-metal materials in hundreds of products. For technical information and the name of the processor nearest you, write Dept. U-8

MARBON CHEMICAL WASHINGTON



BORG-WARNER.

For More Facts Write No. 268 on Information Card-Last Page

SANDVIK

INTEGRAL BAND SPRINGS*

ELIMINATE HOLDER



CUT HANDLING and SHIPPING COSTS

They are Self-Contained by the two outer convolutions of the spring which are fastened together.

NO HOLDER TO HANDLE OR RETURN. LOWER WEIGHT CUTS SHIPPING COSTS.

Other advantages-

- Safer, easier to install; both originally and replacement.
- Permits using different sizes of springs in same housing for different requirements.
- Better, smoother spring action because "binding" friction is minimized; torque is more uniform.

For further details on the size you require, write or phone your nearest Sandvik office. For general information on these and other Sandvik Power Springs send for our new 12-page catalog.

PATENT PENDING

SANDVIK STEEL, INC.

Fair Lawn, New Jersey • SWarthmore 7-6200 In New York City • Algonquin 5-2200

CLEVELAND . DETROIT . SKOKIE, ILL. . LOS ANGELES

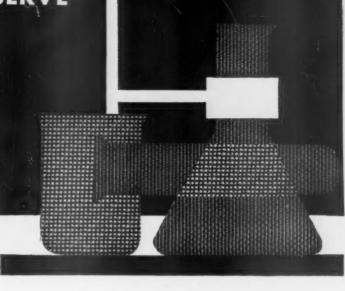
For More Facts Write No. 269 on Information Card—Last Page
Purchasing

use wire cloth in critical operations?

THEN THEY DESERVE

Cambridge

WIRE CLOTH QUALITY & SERVICE



What is Cambridge Quality?

Wire that consistently meets metal or alloy analyses. Trained operators and modern looms to produce cloth from any metal or alloy in any weave. Constant inspection to assure high accuracy in mesh count and mesh size. Craftsmen to make fabrications in any size, shape or quantity to exacting specifications.

This is Cambridge Wire Cloth Quality.

What is Cambridge Service?

Prompt answers to mail or phone inquiries. Experienced Field Engineersexperts in their field-who can help you select the wire cloth to do the best job at lowest cost. Prompt deliveries. Large stocks of frequently used cloth for immediate shipment. Follow-up service to see that our product is giving you the results you want.

This is Cambridge Wire Cloth Service.

Your Cambridge Field Engineer can show you how Cambridge quality and service can help you in your operation. Call him at any time. He's listed in the Yellow Pages under "Wire Cloth". Or, write direct for illustrated 120-page catalog.

Refer to our technical data sheet in CHEMICAL ENGINEERING CATALOG, Page 185.



The Cambridge Wire Cloth Co.

Department R • Cambridge 8, Maryland

Manufacturers of Metal-Mesh Conveyor Belts, Flat Wire Conveyor Belts, Wire Cloth, Wire Cloth Fabrications and Gripper ® Metal-Mesh Slings.

For More Facts Write No. 270 on Information Card-Last Page

Mechanization Leads to Materials Management

(Continued from page 180)

ity, over and under shipments, and errors goes to the buyer to make vendor conferences constructive for both buyer and salesman.

(9) A "Cost Control Report" helps the buyer keep within the dollar limit placed on each open order.

In capsule form, this is how Bettis buys inventory material:

56% On Open Orders

Purchased materials inventory is replenished through yearly open or "blanket" orders for items with firm prices. Individual purchase orders are placed for items for which firm yearly prices cannot be negotiated or which are needed only occasionally. At present, 56% of more than 10,000 stock items are on open orders. We expect to be able to place 80% of stock items on open order within the next year.

During review of stock activity,

the machine prints a "Stores Requisition Card" when the individual item is at or below the predetermined order review point. The requisition cards contain all information necessary to prepare a release of material except the quantity.

The inventory controller places the order quantity in the card and returns it to the data processing section for issuance of a "Stores Order Release" to vendors who have received open orders. Simultaneously, the machine prints a "Stores Receiving Card" for the stores ledger clerk.

When material is delivered receiving completes the "Stores Receiving Card" with an "Adjustment Card," if necessary, and forwards both cards to data processing to update the ledger. From the "Stores Receiving Card" the machine prints "Receiving Reports" to authorize the accounting department to pay vendor invoices. To take care of emergency situations and the purchase of nonledgered stores items "Emergency Requisition Cards" and "Nonchargeable Req-

uisition Cards" are used.

For inventory items not on open order, requisition cards are used to prepare individual purchase orders instead of an open order release. Except for the type of form used, the procedure is otherwise the same.

Bidders Are Machine Listed

Vendors quote on open order inventory items directly on machine prepared "Bid Cards" designed for easy use by the vendor and for subsequent data processing. Special instructions help the vendor complete the bid cards. Returned cards result in a machine listing of bidders, listed by price, unit of measurement, cash discount, etc. After buyers evaluate the bid list and select the successful vendor, data processing prepares an itemized tabulation by vendor. These lists become attachments to the open orders. This is a unique procedure which makes it possible for us to use our data processing machines to solicit and evaluate bids

(Please turn to page 186)



For More Facts Write No. 271 on Information Card-Last Page

Company_

dividualized service at competitive prices. We'll bid on your specials requirements, or fill orders for standard items on short notice from the

extensive line of EVERLOCK products stocked by your local distributor. Send for catalog and samples or call your EVERLOCK representative.



Centering Interest on the "Touch of Gold"

Centerless grinding is a two-wheel operation but your best team is the one-brand combination of a Norton 23 ALUNDUM* grinding wheel and an R51 bond feed wheel.

On the Norton No. 2 Straddle-Bearing Centerless illustrated, or on any other centerless grinder, both wheels are premium performers at a non-premium price. The new 23

ALUNDUM abrasive is no ordinary aluminum oxide but exceptionally fast and free cutting. The R51 rubber bond feed wheel is outstanding for long-lasting, positive work support, without slip or chatter.

Find out how this "Touch of Gold" team can bring new precision and economy to your own centerless grinding. Your Norton Man, an abrasive specialist, or your Norton Distributor are always ready to help. NORTON COMPANY, General Offices, Worcester 6, Massachusetts.

*Trade Mark Reg. U. S. Pat. Off. and Foreign Countries.



No.100 in a series of washroom survey comments from "SBS soap counselors"

We showed them how "on the job "cleansing" licks tough soil problems.



veteran SBS soap counselor, specializes in industrial soil removal. Here's his report after surveying a large paint manufacturing plant.



"Workers in certain departments of this plant are in constant contact with soils that are hard to remove or irritating to the skin... for instance, paints, resins, thinners, pigments, and caustic soda. Management issued some protective clothing, but this measure still left face, hands and arms unprotected. Dermititis was on the increase. What to do?

"We recommended 'bringing the washroom to the worker' by installing SBS 30 Waterless Washstations in all of the sensitive areas. We knew from our survey that SBS 30 will remove all of these problem soils — quickly, safely and at very low cost per clean-up."



Money-saving suggestions like this begin with OPERATION PINPOINT-a thought-provoking presentation filled with facts about skin hygiene and washroom maintenance. The SBS soap counselor serving your area can pinpoint the right soap to do every skin cleansing job best and at lowest cost in your plant. Let him show you OPERATION PINPOINT . . . just call your nearest SBS office, collect.

the washword of industry

sugar beet products co.

SAGINAW, MICH. • Los Angeles, Calif. • Newark, N.J. CANADA: Chemical By-Products, Ltd., Toronto, Ontario



Mechanization Leads to Materials Management

(Continued from page 184)

and to award purchase orders on a scale not possible under the standard, manual procedure. It is now possible to handle thousands of items simultaneously.

More Mechanization to Come

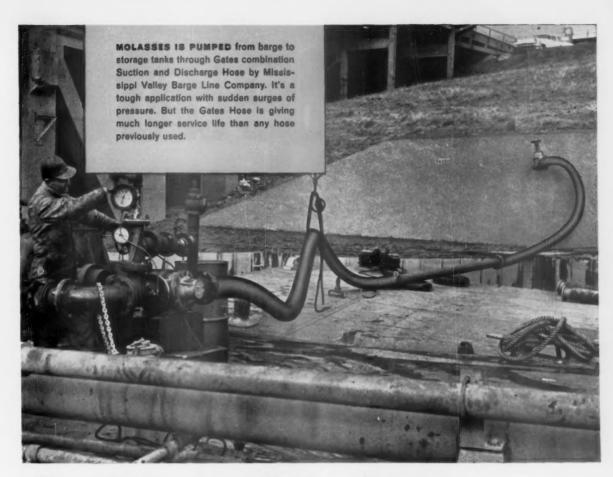
Order quantity and order review point decisions are currently being made manually, but in time will become part of the machine program. The inventory decision rules recognize such factors as carrying costs, restocking costs, stockouts, usage, lead time, demands, prices, balances, and other variables. It is also planned to include machine review of purchases and receipts to make automatic payment to vendors on predetermined payment dates.

Although the system is designed for inventory buying and control, certain reports and concepts are applicable to other areas of buying and expediting. The "Expediting Report" and "Vendor Performance Report" may be used for nonstock maintenance, repair and operating supplies, which presently account for approximately 2000 orders per month.

Once these functions are integrated with its automatic inventory control system, Bettis will have automated material procedures that are economical and dependable.



"Your price went up 3 cents and your popularity just fell 30%."



For molasses or any fluid . . . there's a dependable Gates Hose to convey it!

In any industrial plant, wherever air, water, steam or other fluid must be conveyed, there is a Gates Hose specially built to do the job, and do it exceptionally well. Every Gates Hose is constructed throughout to give you long, trouble-free service, reducing your hose replacement costs.

Gates makes a hose for every application in your plant in a full range of sizes—all are top-quality products of Gates continuing program of Specialized Research.

You get fast delivery from local stocks.

The hundreds of Gates Distributors, located in all parts of the country and throughout the world, have large stocks of hose on hand, backed by Gates servicing warehouses in every major industrial center.

This means that you always get quick delivery of Gates Industrial Hose from a local source. Call your nearby Gates Distributor when you need hose of any kind for any purpose.

The Gates Rubber Company, Denver, Colorado

GATES SUCTION
AND DISCHARGE
HOSE is made sturdy
and crush-resistant
to withstand rough
usage. There are
many types and a full
range of sizes—
for water, acid, oil,
gasoline, etc.—a hose
for every suction and
discharge application.

A Gates Hose for any industrial need is quickly available from your nearby Gates Distributor:

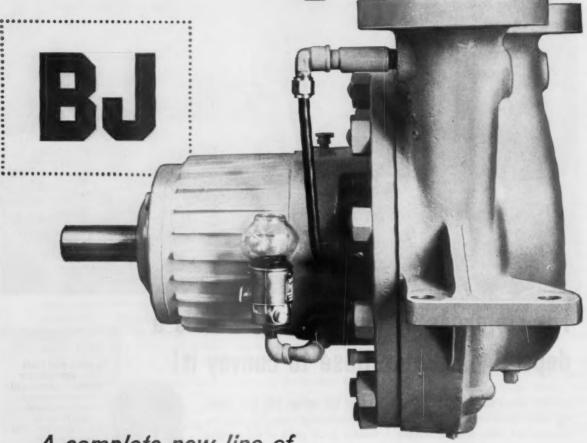
Building the future on 50 years of progress



Gates Industrial Hose

For More Facts Write No. 274 on Information Card-Last Page

Compact!



A complete new line of

Process Pumps

designed for maximum interchangeability

Up to 72 basic combinations of this compact new BJ Pump can provide a custom-engineered pump for almost any process pumping application-from standard, off-the-shelf parts!

Two types, models SMJ and SMJI, offer standard stuffing box construction or an internally sealed version. With either, a choice of impellers, covers, nozzle arrangements, bearing construction, cooling methods and other components allow you to custom-engineer the pump to the job without buying features that aren't required for the service.

Also, standard, interchangeable parts simplify stocking where a number of different pump applications exist in a single plant, and the compact design saves valuable floor space when installed.

Centerline supported, single stage, the SMJ and SMJI are vertically split with either top or end suction.

Model SMJ is suited for high temperature service to 850°F, and the SMJI for a maximum of 400°F. Both are available to 1,200 gpm, and with heads to 700 feet and pressures to 700 psi!

Fan Cooled!

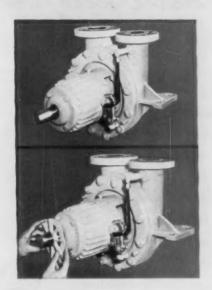
Models SMJ and SMJI Process Pumps

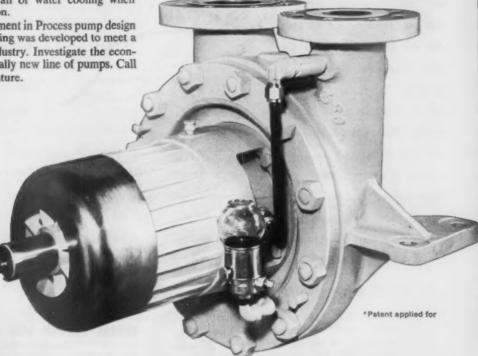
Now an exclusive fan cooled bearing housing available on Byron Jackson SMJ and SMJI Model Process Pumps can entirely eliminate a cooling water supply to the bearings! This feature was designed to eliminate engineering, installation, maintenance and operation costs of a cooling water supply, and can prevent costly freeze-ups in severe climates.

Simple, efficient and trouble-free, it works like an aircooled electric motor. A fan mounted on the shaft behind the bearing draws cool air over the thrust bearing and out over the cooling fins of the housing. For lower temperature service the same pump can be used as a simple air cooled bearing, without the fan and fan cover, using the cooling fins alone to dissipate heat.

Only two different bearing housings fit all models of vertical SMI and SMII's up to 300 horsepower, and either may be adapted to fan or water cooling when purchased or after installation.

As the first major improvement in Process pump design in years, this fan cooled bearing was developed to meet a long-existing need of the industry. Investigate the economy and efficiency of this really new line of pumps. Call or write for descriptive literature.







Byron Jackson Pumps, Inc.

Subsidiary of Borg-Warner Corporation P.O. Box 2017, Terminal Annex, Los Angeles 54, California

BUSINESS IN MOTION

To our Colleagues in American Business ...

It has often been mentioned in these messages that in order to produce the best possible product at the least possible cost, it is a good idea to take your suppliers into your confidence...tell them your problems...seek their aid.

The following incident is a striking example of the advisability of doing just that.

The Dayton Precision Manufacturing Company, maker of the commutator you see illustrated, was having difficulties with the ferrous metal it was using for the hub; for not only did the rod from which the hubs were fabricated have to be drilled but it also had to be able to withstand a flanging op-

eration. Their Chief Engineer decided to discuss this with one of Revere's Technical Advisors.

After a thorough study of the problem Revere Brass Rod of a certain alloy was recommended and samples were furnished. The manufacturer found the machinability of the brass rod to be outstanding, being readily and speedily drilled. Also, it withstood the flanging operation...a set of manufacturing conditions where only brass, the right kind of brass, outshines all other metals and alloys.

The final score showed that the low first cost of the brass rod, plus the fact that it could be machined faster and more easily than ferrous metal, resulted

> in a superior product at a saving in production cost. A further advantage was the added sales appeal of the brass hub.

There you have another example of how Revere in collaboration with the manufacturer's engineering department, helped "fit the metal to the job," which resulted in a better part at the least possible cost.

Revere, a supplier, is conscious that still other suppliers can often collaborate to help customers produce a superior product for less money.

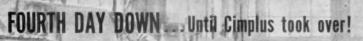
And because almost every industry you can name is able to cite similar instances, we suggest that no matter what your suppliers ship you, it may pay you to take them into your confidence.





REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801 Executive Offices: 230 Park Avenue, New York 17, N. Y. Distributors Everywhere



Here's an actual case history of another plant that has discovered the remarkable qualities of rust-controlling CIMPLUS, transparent grinding fluid of the famous CIMCOOL family. (Company name on request.)

FIELD SERVICE REPORT

MARCH

The job was grinding cast iron machine tool parts on three rotary surface grinders with an 1800 gallon central cutting fluid system.

The coolant they had been using had let the sludge cake up and clog up the lines and they had been shut down for four days. Then we installed Cimplus at 100 to 1 dilution and the problem was solved.

Since Cimplus took over, they've had no sludge trouble at all. The swarf and grit settles nicely for them, but it doesn't cake. They're also real pleased with the rust prevention on the cast iron parts that Cimplus gives them.

N. Y. Office





FOR 100% OF ALL METAL CUTTING JOBS

Production-proved products of The Cincinnati Milling Machine Co.

CIMCOOL 52 Concentrate — The pink fluid which covers 85% of all metal cutting jobs.

CIMPERIAL — Newest in the famous, industry-proven line of CIMCOOL Cutting Fluids.

CIMPLUS — The transparent grinding fluid which provides exceptional rust control.

CIMCUT Concentrates (AA, NC, SS) — For every job requiring an oil-base cutting fluid.

ALSO — CIMCOOL Tapping Compound — CIMCOOL Bactericide — CIMCOOL Machine Cleaner.

For full information on the complete family of CIMCOOL Cutting Fluids, call your CIMCOOL Distributor. Or contact Cincinnati Milling Products Division, Cincinnati 9, Ohio.

**Trade Marks Reg. U. S. Pat. Off.

For More Facts Write No. 277 on Information Card-Last Page

Employment Service

MANAGER PURCHASING

Major division of national corporation has management level opening in purchasing department for experienced man reporting to director of purchasing. Requires minimum of 5 years purchasing experience including 3 years in cost-type procurement. Need man between 30 and 40 with degree preferably in engineering plus related experience in manufacturing, quality control, processing, manufacturing engineering. Familiarity with electronic manufacturing desirable. Large high-precision manufacturer. Generous company benefits. Send complete resume of experience and educational background. All replies strictly confidential. Write Box 504.

Experience: 32 yrs. experience purchasing raw materials, equipment & supplies for single & multi-plant paint manufacturer. Originated & administered systems to improve efficiency of purchasing & inventory control. Operated purchasing dept. as a profit making function.

Education: B.Sc. bus. adm. class 1929 Union College.

Prefer Greater New York area.

Write: Box 68

Experience: Eleven years varied experience with medium steel fabricator. Shop laborer, stock clerk, production ass't, cost studies, estimating, inside sales, inventory control, billing clerk, five years steel mill purchasing, one year P. A., set up own purchasing department.

Education: B.A. Bowdoin College, structural engineering ICS correspondence course.

Will relocate Write: Box 72

Experience: Knowledge of office procedures, inventory control, material control by LB.M., supervision of staff & hourly people. Currently in charge of all warehouse operations for receipt, storage & issuing of all materials. Purchasing experience in all fields related to oil refinery.

Education: B.S. in mechanical engineering.

Will relocate. Write: Box 71 Experience: Purchasing representative for aircraft corp. 1½ yr. P.A. for a municipality 6 yrs. Asst. P.A. for a textile firm 7 yrs. Asst. cost accountant for textile firm 7 mos.

Education: High School, Commercial College 1½ yrs. N.A.P.A. basic and advanced purchasing course.

Will relocate Write: Box 65

Experience: 11 yrs. purchasing electronics, photo, electrical, mill supplies, office supplies, plant maintenance equipment and services. Inventory control and value analysis.

Education: Electronic technician. Five years University night school in Bus. Admin., studying for degree.

Will relocate. Write: Box 80

Experience: Twelve years purchasing all items for multiplant upholstered furniture manufacturer. Also, heavy experience in accounting, office management and taxes.

Education: Graduate of bus. adm. school.

Will relocate. Prefer New England. Write: Box 64

Experience: Did general buying for aluminum fabrication plant for 5 years—fasteners, mill supplies, steel, aluminum, miscellaneous. In charge of 5 person dept. when P. A. absent. Experience complemented by 1½ years in shop and 1 in contracts admin.

Education: Ph.D. in history—Boston Univ.—1959 M.A. Major in history— Boston Univ.—1948 Ed.M.—Boston Univ. 1947 B.S. in Ed.—Gorham, Me., Teachers College—1942.

Will relocate. Write: Box 59

HOW TO APPLY

There is no charge for this service, which is available both to purchasing personnel seeking employment and to employers requiring replacements or additions to their purchasing depts. Please specify the form you want—employer or applicant. Address all correspondence (requests for forms, and answers to advertisements) to Box No., Employment Service, Purchasing Magazine, 205 East 42nd St., New York 16.

Experience: Senior buyer 6 years experience including industrial high and low production purchases and ASPR specification subcontracts. Also experienced in capital and expense equipment. Responsibilities have included value analysis, close liaison with inventory control and shop scheduling, vendor selection, and supervision of fellow clerks Some engineering and IBM. Seeking growth opportunity.

Education: BSEE, U. of Illinois; 2 years U. S. Military Academy; University evening courses in accounting and business law; 6 week corporate orientation program; and 6 week corporate purchasing school.

Will relocate. Write: Box 61

Experience: Purchasing agent 15 years, commercial, industrial, engineering and construction experience. Skilled in negotiations, administration, and subcontracts of diverse nature. Resume available on request.

Education: B.S. M.E. degrees.

Will relocate. Write: Box 81

Experience: Twenty years P.A. in textile finishing company. Broad experience in procurement of chemicals, dyestuff, packaging supplies, MRO supplies. Will consider other fields. Will furnish resume. Age 46.

Education: Two years business college.
Will relocate: Prefer New Jersey.

Write: Box 83

Experience: 20 yrs. in all phases of production and inventory control both automotive and aircraft. 5 yrs. as productive and general stores buyer large industrial plant, staff asst. to purchasing manager including purchasing procedures.

Education: High school—2 yrs. seminary—2 yrs. commerce & finance—short courses in management.

Will relocate. Prefer Detroit area.

Write: Box 79

Experience: Three years industrial purchasing with woodworking mfg. as purchasing director. Experienced in foreign purchasing, planning, administering, and negotiating a value analysis program, perpetual inventory system, plant scheduling. Background in purchasing lumber, veneer, metals, plastic material and parts, electronic components, stamped and wire formed parts.

Education: B.S. degree in bus. admin. Northwestern University, accounting major.

Will relocate. Midwest area or Los Angeles.

Write: Box 67



Precision finishing

All around your shop...



General purpose machining

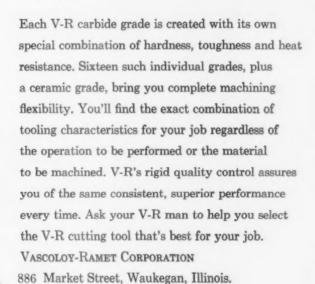




16 V-R carbide grades give complete machining flexibility



Heavy-duty roughing









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